THE RELATIONSHIP BETWEEN TEST PREPARATION STRATEGIES AND PERFORMANCE OF AT-RISK STUDENTS WHO SAT FOR THE CLAST FOR THE FIRST TIME

By

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by

Sharon Ann Swallwood

This dissertation is dedicated to

my parents

Harriet and Lester Swallwood

and the memory of my grandparents

Yetta and Samuel Swallwood

and

Florence and Samuel Rothman

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Abstract of Dissertation Presented to the Graduate School of the University of Florida in Partial Fulfillment of the Requirements for the Degree of Doctor of Education

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By

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Chair: Dr. John Nickens
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The purpose of this study was to determine the relationship between performance of at-risk students who sat for the College-Level Academic Skills Test (CLAST) and test preparation strategies (CLAST review sessions, self-study, and CLAST-designated academic course completion). Information was needed to improve CLAST preparation strategies. Information was obtained regarding students' preparation strategies, perceived helpfulness of these strategies, and how use of preparation strategies related to CLAST scores.

All 320 students registered for the February 1993 CLAST at the selected community college were requested to complete

a questionnaire and return it to the test site. Of the 271 students who returned the survey, 115 students met the data collection requirements and were considered at-risk for a total of 239 subtests, as some students were at risk for more than one subtest. Additionally, a telephone survey of 39 at-risk students was conducted.

For the reading subtest, 23 students were at-risk. For the mathematics subtest, 76 students were at-risk. For the ELS subtest, 70 students were at-risk. For the essay subtest, 70 students were at-risk.

Test scores indicated that reading and English Language Skills (ELS) review sessions were helpful in passing the related subtests, while mathematics and essay review sessions were not helpful. However, most students perceived that the review sessions were helpful.

Test scores indicated that self-study in reading, mathematics, ELS, and essay was helpful in passing the related subtests. Most students perceived that their self-study were helpful.

Test scores indicated that course completion was not helpful in passing the reading subtest. Academic courses were helpful in passing the math subtest. Only academic courses and preparatory/academic combinations were helpful in passing the ELS and essay subtests.

For future study, it was recommended that the qualitative component be expanded, a quantitative component be added, and both components be administered for at least

two successive CLAST administrations at the selected community college. It also was recommended that similar qualitative and quantitative studies be conducted at other community colleges in Florida to profile at-risk students throughout the state.

CHAPTER 1
INTRODUCTION

The 1979 Florida Legislature initiated the process of developing minimum standards for college-level skills in communication and mathematics for a statewide, college-level testing program. This legislation was designed to ensure that minimum communication and mathematics skills were achieved by all students who completed their sophomore year in college (Blee, 1986). The concept of testing all "rising juniors" in the state of Florida resulted in the creation of the College-Level Academic Skills Test (CLAST). The CLAST was designed to attest that the students who moved from one level of education to the next had the skills needed for success at the higher level. According to the 1991-1992 Test Administration Plan (Department of Education-the CLAST, 1991),

> The College-Level Academic Skills Test (the CLAST) is a part of Florida's system of educational accountability . . . The CLAST . . . measures students' attainment of the college-level communication and mathematics skills that were identified by the faculties of community colleges and state universities through the College-Level Academic Skills Project (CLASP). (p. 1)

Once minimum passing levels for CLAST subtests were determined, criteria and dates for revision of passing standards also were established. Each time the minimum competency standards were raised, an increasing percentage of students were unable to pass the CLAST (Belcher, 1989).

High grades and course completion did not necessarily indicate a student would pass the CLAST. Researchers at Broward Community College reported that some students with grade point averages of 3.5 or higher did not pass the CLAST on the first attempt (Office of Institutional Research, 1989b).

Although some students had passing grades in all or most courses and made two or more attempts to pass the CLAST, these students still did not pass all of the CLAST subtests. According to Klein (1992), obtaining good grades in any subject area was neither an accurate predictor of CLAST success nor a complete measure of competency. Students who obtained grades of "C" or higher and completed all institutional graduation requirements still would not be eligible for an Associate of Arts degree from a Florida community college if they did not pass all CLAST subtests. Thus, while some students have no additional coursework to complete, they lack CLAST mastery in one or more of the subtest areas.

Entering freshmen who lacked basic skills competency in reading, English, and/or mathematics, as evidenced by their college placement scores, needed remediation. Students who failed CLAST subtests generally lacked prerequisite skills needed to achieve mastery in a test-taking situation and, for some students, remediating subject matter deficiencies was not an easy task (Office of Institutional Research, 1989c). Belcher (1986) noted that Hispanic and black non-Hispanic

students exhibited lower entry-level basic skills and accumulated more developmental credits in most areas.

One of the best predictors of CLAST success was the college entry placement test scores. Klein (1992) found crosstabulating CLAST subtest scores with entry-level placement scores yielded a significant relationship. He noted that most students who scored low on the entry placement test did not pass the corresponding CLAST subtest, whereas students who scored even slightly higher than the entry-level cut score usually passed that CLAST subtest. He concluded that CLAST performance was predicted remarkably well by entry placement exam performance and strong relationships were evident between entry placement scores in each subject and corresponding CLAST subtest scores.

Failing one or more of the entry placement tests seemed to predict later failing one or more of the CLAST subtests. Klein (1992) found overall that approximately 44% of the students who failed the reading entry placement test failed the CLAST reading subtest, 52% of the students who failed the writing entry placement test failed the CLAST writing subtest, and 22% of the students who failed the mathematics entry placement test failed the CLAST math subtest. These percentages varied by gender and ethnicity. Thus, students who are underprepared at the time of college admission must be viewed as "at-risk" for failing the CLAST.

Colleges have devised strategies to assist at-risk students in passing the CLAST on the first attempt. At-risk

students need to learn CLAST skills and test-taking strategies (Belcher, 1985). The Florida Department of Education established the basic guideline of the completion of 18 college-level credit hours before sitting for the CLAST. The Test of Academic Skills (TAS), written by the Florida Department of Education, is available to all Florida institutions of higher education for student use as a practice test. Some colleges identify courses that include CLAST skills in the curriculums. Additionally, several Florida universities and all two-year institutions of higher education offer some form of CLAST review sessions. These classes identify CLAST skills and provide practice in each subtest area (J. Nickens, personal communication, September 22, 1992).

For students who prefer to devise their own course of study or want additional practice beyond the review session(s), CLAST practice materials are available. Review books and programs have been written by instructors from various Florida public postsecondary institutions. Publishers such as Harcourt Brace Jovanovich, Kendall/Hunt, and Prentice Hall publish textbooks to assist students in developing specific CLAST competencies.

Three preparation strategies are available to students wishing to prepare for the CLAST. These preparation strategies include (a) institution-sponsored CLAST review sessions, including CLAST practice tests; (b) self-study, including use of CLAST review books, CLAST materials, and

tutorial assistance from subject matter specialists or peers; and (c) enrollment in CLAST-related academic courses incorporating CLAST skills in the curriculums. Using any or all CLAST preparation strategies might help students acquire the skills needed to improve their performance and achieve initial passing scores on CLAST subtests.

Background and Rationale

Many students do not pass all four CLAST subtests on the first attempt. Based on 1991 standards for public and private community colleges and universities, the percentage of community college first-time examinees passing all four CLAST subtests was only 53% for the 1991-1992 academic year (Florida Department of Education, 1993). Klein (1992) found that, depending on the subtest, between 26-52% of at-risk students who sat for CLAST for the first time failed and had to be retested. Additionally, as CLAST passing standards have increased, there has been a decrease in the percentage of students who sit for the CLAST for the first time and pass all four subtests. Clearly, there is a need to help students improve their pass rate. The question is whether or not at-risk students utilizing CLAST preparation strategies would be able to improve their performance on the CLAST. A community college on the west coast of Florida was chosen to study this problem in detail.

The selected community college offers a variety of preparation strategies to help students prepare for and pass

the CLAST. A description of each of these strategies follows.

CLAST Review Sessions

Beginning 6 weeks before a CLAST administration, review sessions are made available to all students registered for the test. These sessions are taught by full-time reading, mathematics, and English instructors who utilize CLAST competencies in their reviews and offer practice CLAST exercises and tests, including TAS. The review instructors also encourage students to study on their own.

Preregistration is not required, although students can register for these sessions when registering for the CLAST. Students can enroll in as many review sessions as desired. These review sessions are offered at various times throughout the 6 weeks before the CLAST administration at no cost to the student. They are advertised on the college's electronic bulletin board, through announcements posted on CLAST instructors' doors, and by word-of-mouth.

Self-Study

For students desiring to study on their own or in groups, the selected community college provides additional resources. The campus library houses many CLAST review books, subject area books (i.e., statistics), and a series of 12 videocassettes on reading, mathematics, and English CLAST skills. Additionally, the support center provides one-on-one

instruction with mathematics and English tutors; reading, mathematics, and English software on computers; worksheets; and subject area textbooks. Students are able to use these resources during normal support center and college library operating hours. Moreover, all college instructors keep posted office hours for students seeking additional subject area help. Lastly, the college bookstore offers CLAST review books for sale.

CLAST-Related Courses

The selected community college designates certain academic courses as CLAST preparation courses, as many or all CLAST competencies are incorporated into the curriculums. These reading, mathematics, and English courses are either required or recommended, based on a student's placement test scores. Counselors are available to interpret the placement test results and explain which courses are necessary to complete program requirements. The designated CLAST-related academic courses at the selected community college are REA 1105, College Reading Techniques, for reading; ENC 1101, Composition I, and ENC 1102, Composition II, for English language skills/essay; and MGF 1113, Topics in College Math I, and MGF 1114, Topics in College Math II, for computation. Students designated "at-risk" are required to enroll in the subject area preparatory courses before enrolling in these academic courses.

Need for the Study

The offering of these services at the selected community college does not mean that students are aware of or use the services. Little is known about the study habits of at-risk students who sat for the CLAST for the first time, although researchers have found that these students have a high failure rate (Klein, 1992; Nickens, 1989). Therefore, it is desirable to learn about the study habits of these students.

Investigating the preparation strategies perceived as useful and used in relation to passing the CLAST needed to be studied for at-risk students. Therefore, the purpose of this study was to determine the relationship between test preparation strategies and performance of at-risk students who sat for the CLAST for the first time. Information was needed to improve CLAST preparation strategies.

This study explored certain aspects of the CLAST not previously investigated. The relationship between test preparation strategies and test performance has not been fully studied for at-risk students. Questionnaire responses, Individual Prescriptive Evaluation Records (IPERs), and interview records concerning test preparation and study strategies of students preparing for their first CLAST attempt were examined. Students' perceptions of the helpfulness of CLAST review sessions and self-study were related to their CLAST performance. Additionally, courses passed in reading, mathematics, and English were studied to

determine if students had completed the minimum suggested CLAST-related skills classes.

The results of this research could help college administrators to prepare new curriculums, courses, and materials. Findings from this study may assist guidance counselors in better advising at-risk students about strategies and materials available to maximize efforts to pass the CLAST.

This research may also provide information concerning the relationship between review sessions, self-study, CLAST-designated courses, and CLAST results for at-risk students.

Statement of the Problem

Students were identified through college placement admissions tests as at-risk for failing the CLAST. Various services were provided by colleges to enhance these academically "underprepared" students' chances of passing the CLAST. However, the helpfulness of these strategies has not been reported in the literature. The purpose of this study was to determine the relationship between performance of at-risk students who sat for the CLAST for the first time at a selected community college and selected test preparation strategies. Students' perceptions of the helpfulness of these strategies were explored in relationship to why these at-risk students performed poorly on the CLAST. Specifically, the problem of this study was to answer the following questions:

1. How helpful did the students perceive CLAST review sessions for passing the CLAST?
2. How helpful did the students perceive CLAST self-study for passing the CLAST?
3. How helpful was completing CLAST-related courses for passing the related the CLAST subtests?

Significance of the Study

This study was designed to investigate the relationship between performance of at-risk students who sat for the CLAST for the first time and selected test preparation strategies (CLAST review sessions, self-study, and CLAST-designated course completion). This study investigated which CLAST preparation strategies used by at-risk students at the selected institution proved to be helpful in passing the February 1993 CLAST.

Since the inception of the CLAST in 1983, the cut scores have been increased three times. As cut scores were raised, the number of students who initially failed the CLAST also rose. Therefore, it was desirable to determine if CLAST review sessions, self-study, and/or completion of CLAST-related courses helped students prepare for the CLAST.

The strategies students perceived as helpful were examined to determine if there was a correlation between use of these strategies and passing the CLAST. It seemed possible that students might perceive strategies to be

helpful when, in fact, they might not have any effect on CLAST scores. Conversely, they might perceive helpful strategies to be ineffectual. Therefore, it was desirable to examine the helpfulness of these CLAST preparation strategies as related to initial CLAST scores.

Towards this end, this study examined the helpfulness of selected CLAST preparation strategies in relationship to CLAST performance. The number of at-risk students failing none, one, two, three, or four of the CLAST subtests in relation to preparation strategies utilized was determined.

Presently, there has been little research which examined students' perceptions of the helpfulness of their preparation strategies as well as the actual helpfulness of preparation strategies as evidenced by CLAST pass/fail scores.

Limitations

The limitations of this study were as follows:

1. Students who graduated from a high school outside the United States or obtained a GED outside of the United States were not included in the study.
2. Hearing impaired students were not included in this study.
3. Only students who were considered at-risk based on college entrance placement test scores were included.
4. The sample for this study consisted only of students who attended the selected community college and sat for the CLAST for the first time in February 1993.

5. This study reviewed CLAST preparation strategies offered only at the selected community college.

Assumptions

For the purpose of this study the following assumptions were made:

1. Student records provided by the Florida State Department of Education and the selected community college contained accurate information.
2. Students provided truthful answers on the questionnaire and during the interviews.

Definition of Terms

At-risk student refers to a student whose college-entrance placement test scores indicate that college preparatory courses in reading, English, and/or mathematics are required before enrollment in college-level courses.

CLAST (College-Level Academic Skills Test) refers to the criterion-referenced test given by the State of Florida to all A.A. or four-year degree seeking students at Florida's public community colleges and universities. These students must pass all reading, English language skills (ELS), essay (writing), and mathematics subtests. Additionally, all students who attend private colleges and universities and receive state financial aid and all people who apply for a Florida teaching certificate are required to pass the CLAST (Metzger, Cleveland, & Kennedy, 1993).

Literal and critical comprehension skills are measured by 35 test items. Word choice, sentence structure, and language skills (grammar, spelling, capitalization, and punctuation skills) are measured by 34 items. The essay section requires students to write on one or two selected topics within a 50-minute period. Arithmetic, statistics, algebra, geometry and measurement, logical reasoning, and computer technology skills are measured by 55 items (Belcher, 1986).

CLAST retaker refers to any student who initially took and failed one or more of the CLAST subtests and must retake the failed portion of the CLAST.

Cut score refers to the minimum level designated as passing for each CLAST subtest; CLAST passing standards.

Individual Prescriptive Evaluation Record (IPER) refers to the detailed record of each community college student, containing demographic information (name, address, telephone number, college student identification number, social security number, date of birth, and high school with year of graduation) and academic information (courses taken, grades, and GPA). Two types of IPERs are available. For this study, IPER will refer to the short form of the IPER, including only the academic and demographic information. A long form of the IPER contains the academic and demographic information as well as courses needed to graduate, record of graduation requirements, and student progress in meeting those requirements.

Sat for the CLAST refers to a student who took the CLAST.

Stop out refers to a student with discontinuous enrollment.

Summary

This case study was designed to determine the relationship between test preparation strategies and performance of at-risk students who sat for the CLAST for the first time in February 1993 at a selected community college. Information for formulating preparation strategies related to increasing the number of at-risk students who pass the CLAST on the first attempt was obtained. Information was sought regarding students' preparation strategies, perceived helpfulness of these strategies, and how use of preparation strategies related to CLAST scores.

This study has practical significance by providing information for college administrators, guidance counselors, and college students. The results of the study could help administrators more efficiently plan curriculums and courses, guidance counselors better meet the needs of the students, and students obtain information on how to study more effectively to pass the CLAST on the first attempt.

CHAPTER 2
REVIEW OF RELATED LITERATURE

The purpose of this chapter is to present a review of the literature regarding key concepts and terminology used in this study. Toward this end, an overview of five topics is presented: (a) underprepared students and college admissions, (b) testing students' academic skills, (c) Florida's College-Level Academic Skills Test, (d) student characteristics for success in college, and (e) test preparation strategies.

Underprepared Students and College Admissions

Some colleges require entering students to take placement tests to evaluate the students' incoming skills in reading, English, and mathematics. Admittance to a college or university does not necessarily mean students are entering with college-level skills, although these students are judged according to college-level standards. Phillips and Clarizio (1988) believed "existing developmental standard score scales for widely used . . . group-administered achievement tests tend to require below-average students to gain more than average students and sometimes more than above-average students" (p. 15).

Admitting underprepared students to institutions of higher education is not a new educational phenomenon. During the nineteenth century, many students entered college with below-college-level skills. The Yale Report, in 1828, recommended ending admittance of underprepared students. In the 1864 Cornell University Faculty Minutes, a faculty committee on "Doubtful Cases" made admission decisions concerning students who did not fully meet entrance requirements (Brier, 1984). Underprepared students and compensatory courses were documented both at Vassar College and The University of Wisconsin. To meet the needs of these underprepared students, several approaches were used, including preparatory departments, academies, tutoring, and tutoring schools (Brier, 1984).

Admission of underprepared students continued throughout the twentieth century. In the late 1930s and early 1940s, reading was added to the list of deficient skills; developmental writing followed soon after. Stanford instituted a how-to study course in 1943 (Roueche & Snow, 1977). Remedial and compensatory education came to the forefront after World War II and again after the passage of the Elementary and Secondary Education Act of 1965.

With the public schools turning out so many underprepared students, it seemed natural for the colleges to offer developmental services to incoming students (Cross, 1985). A majority of colleges and universities provided students with some preparatory courses to enable them to

succeed in college-level classes (Mickler & Chapel, 1989). A national basic skills survey revealed that critical basic skills instruction was perceived as having a positive value and a place in college (Gruenberg, 1983).

Community colleges offered remedial programs for underprepared students. Remedial education was popular at two-year colleges because administrators could align their colleges' missions to differentiate themselves from public schools and four-year universities (McGrath & Spear, 1987; Vaughan, 1984). Vaughan (1984) pointed out that public community colleges were quite willing to recruit, enroll, and educate underprepared students. Roueche and Snow (1977) noted the community college was the only option for some students during the 1960s.

Groups of students underrepresented in higher education sought entrance into a community college as the key to higher education (Tillery & Deegan, 1985). Students unprepared for college-level work were entering in increasing numbers (Belcher, 1986). In 1973, one-third of all entering students were admitted through community colleges; low socioeconomic status was linked to community college enrollment. When the City University of New York (CUNY) announced its open-admissions policy, it targeted underprepared students for admission; the 1970 freshman class of CUNY increased 75% to 35,000 (Donovan, 1985). Roueche and Snow (1977) noted that by the mid-1970s, 95% of the two-year colleges and 41% of the four-year colleges had open-access policies. Of the over

792,000 students enrolled in Texas institutions of higher education in the fall of 1987, "at least 30% of these students did not have skills, at levels necessary to be successful in college, in at least one of three critical areas: mathematics, writing, or reading" (Grable, 1988, p. 2).

The community college population consisted of a diverse student body with a wide array of needs, and adjusting achievement assessment efforts was often a difficult and complex process (Lenning, 1977). Because of this phenomenon, testing procedures and curriculum revisions were instituted. The need to utilize testing for placement and assessment was crucial in open-access institutions (Grable, 1988).

Placement tests in reading, English, and mathematics were used to identify entering students' skills levels. This diverse-skills-level population presented some problems in the areas of instruction, curriculum, and evaluation. However, Grable (1988) believed the improvement of academic standards and the use of demonstrated competencies as the basis to award degrees and certificates were extremely important at two-year colleges.

Characteristics that differentiated community colleges from other institutions of higher learning contributed to a variety of assessment problems. Community colleges offered varied programs and courses to met students' remedial needs, thereby causing unique problems in achievement assessment (Lenning, 1977). Kraetsch (1980) found academically

deficient students differed from traditional college students in personality styles and skill levels. Low self-esteem, poor study skills and habits, low attention span, and inadequate basic skills, in addition to learning blocks and little or no motivation, characterized the academically deficient student. A 1981 survey of 2800 colleges and universities conducted by CUNY found that 85% of the institutions perceived poorly prepared entering freshmen "somewhat of a problem" or "very much a problem" and 28% of those freshmen were viewed as requiring remediation in reading (Lederman, Ribaudo, & Ryzewic, 1985).

Once the problem was perceived, it required documentation. The educational competencies of academically deficient students were shown by performance on common standardized intelligence and achievement tests. As the goal of common testing was to corroborate that common learning took place, test scores satisfied the legislatures and the public that whatever common goals and objectives were designated as essential and necessary were objectively obtained (Losak, 1987).

In the context of measuring ability, knowing the general content of the test might play a role in examination preparation. Bond (1989) realized that inasmuch as "tests differ widely in mode of administration, timing, item format, and so forth, it is difficult to give a general description of what constitutes test sophistication" (p. 431).

A test that would determine student placement or graduation is not to be taken lightly. Knowing what to expect on a test might help students to better prepare for that test. Many students want an edge and feel that some examination preparation, regardless of the form it takes, is helpful (Bond, 1989).

Testing Students' Academic Skills

The uses for testing continue to increase in education and industry. National, state, and local educational agencies rely on competency tests as a factor in grade promotion, high school graduation, college admissions, and teacher certification (Airasian, 1989; Ellwein, Glass, & Smith, 1988). Aptitude test scores are used to predict grades in school, and intelligence tests are used to predict job success (McClelland, 1973). Businesses and organizations use employment testing to verify applicant skills. Even recent court rulings and administrative policies have cast testing in a more favorable light (Zemke, 1983).

Testing has entered into almost every aspect of our society, and test use continues to increase (McClelland, 1973). As tests have become more important, the application of test results to verify accountability has increased (Linn, 1987). The Education Commission of the States (1987) found positives and negatives concerning assessment, including increased state support for programs, greater internal

reform, more emphasis on remediation and college preparation, and higher-than-planned-for costs.

National attention has focused on the condition of educational systems in America during the past 25 years. Airasian (1989) found that our society perceived that because school standards and quality have declined, our society is in trouble. Belcher (1986) found students who were unprepared for college-level work entering college in increasing numbers. Decreasing average college admissions test scores have been found on the College Entrance Examination Board's Scholastic Aptitude Test (SAT) and the American College Testing Program's battery of tests (ACT) (Airasian, 1989; Clark & Grandy, 1984; Garvey, 1981; Turnbull, 1985). The declining scores have focused attention on testing programs, resulting in increased accountability and documentation of standardized tests results.

Standardized tests receive widespread public support and provide important information concerning student achievement; they have a prominent place in the school systems (Frierson, 1986; Jaeger, 1989; Linn, Madaus, & Pedulla, 1982; Popham & Rankin, 1981; Porter, 1983; Resnick, 1981a, 1981b; Sproull & Zabrow, 1981). Current practices utilize tests for policies and decisions quite removed from actual teaching (Airasian, 1989; Porter, 1983; Rudman, 1987). Tests have been used to establish criteria on educational quality and ranking at national, state, and/or local levels (Airasian, 1989; Rudman, 1987; Witt, 1987), placement and exit testing (Blee, 1985;

Popham & Rankin, 1981), aptitude testing (Kulik, Bangert-Drowns, & Kulik, 1984; Linn, et al., 1982), and student competence and all phases of scholastic ability from elementary school to graduate school (Airasian, 1989; Bond, 1989; Frierson, 1986; Jaeger, 1989; Linn, et al., 1982; Porter, 1983; Rudman, 1987). According to Berk (1987) "40 states have mandated minimum competency testing programs for students, and more than 30 have mandated competency tests for teachers, administrators, and/or other educational personnel" (p. 69).

Tests have become instrumental in the educational environment as a means to objectively assess academic achievement (Airasian, 1989; Linn, et al., 1982; Resnick, 1981a). However, Berk (1986) pointed out that "standards are still being set unsystematically by teachers, district- and state-level test makers, state legislatures, licensing and certification boards, and test publishers" and that "competency standards are specified for a variety of criterion-referenced tests, and important decisions about individuals are made based on these standards" (p. 137). Livingston and Zieky (1982) believed that

> all methods of standard setting require judgment. The process of setting a standard can be only as good as the judgments that go into it. The standard will depend on whose judgments are involved in the process. In this sense, all standards are subjective. Yet, once a standard has been set, the decisions based on it can be made objectively. Instead of a separate set of judgments for each test-taker, you will have the same set of judgments applied to all test-takers. Standards cannot be objectively determined, but they can be objectively applied. (p. 67)

Airasian (1989) pointed out that the public linked educational standards to state-mandated graduation tests and traditional educational values. The testing movement, according to Resnick (1981b),

> responds to three long-standing features of U. S. society: 1) a compelling business interest in making the most efficient use of human resources; 2) a desire, in keeping with an egalitarian tradition, to reward talent regardless of social origins; and 3) a recognized need for national (and public) standards to moderate and limit the autonomy of our local institutions. (p. 625)

Interest in assessment of student skills has increased (Airasian, 1989). Assessment, as defined by Lenning (1977), is "the measurement, analysis, appraisal and evaluation of the attainment or increase of some desired and intended accomplishment for individuals or groups of students" (p. 4). Mandated testing is usually the means of carrying out student assessment and can be the result of public attention (Guthrie, 1984). In addition, mandated testing impacts on student expectations, teaching styles, and curriculum decisions (Rudman, 1987). According to Airasian (1989),

> a crucial feature of the new, state-mandated certification tests is decision making: any given test score can be compared to an established standard of satisfactory performance (in most states the standard is some minimum percentage of test items answered correctly) . . . and a pass/fail decision made about the testtaker. Much of the appeal of the new tests is the automatic decision that flows from and is tied to the test score. (p. 56)

Exit testing is one measure of certifying student achievement. Blee (1985) found mandated testing, in the form of statewide exit testing, a sound idea, especially if the testing program was in line with the instructional goals of

those institutions within the state. Nickens (1985) cautioned that exit testing was not beneficial to the student, as the time factor did not provide for student improvement.

Limitations exist with exit testing. A perfectly reliable or accurate test does not exist, and measurement errors, one source of student failure, can result on any test (Linn et al., 1982). Linn et al. (1982) asserted that "measurement error must be taken into account whenever we test or measure anything, be it minimum competency . . . when the judgments or consequences resulting from the measurements have serious implications for the individual" (pp. 14-15). Furthermore, they found methodological decisions most related to abilities were used in statewide competency testing programs to determine the competency level of students. Losak (1987) stated:

> Common testing has a way of assuring that common learning has occurred, in turn assuring the public, and the legislators representing the public, that those goals, values, and objectives deemed important and appropriate are in fact demonstrably achieved in an objective manner. (p. 2)

Not all students have the same abilities nor do they progress at the same rate. Some students require additional time and/or attempts to master educational concepts. Nickens (1985) stated:

> The clientele for which the institution was brought into existence to serve in the first place--the low socioeconomic, the deprived, and the adult seeking economic mobility--might never get past remediation . . . because they cannot meet the criteria for placement in college-level programs. (p. 53)

Linn et al. (1982) reported that African-American students were disproportionately and adversely impacted by minimum competency testing requirements. Additionally, they disagreed with the practice of relying on minimum competency tests as the only or primary method to determine grade level promotions.

Florida's College-Level Academic Skills Test

Legislators in Florida have espoused Guthrie's (1984) belief that state mandated educational tests, linked to accountability programs, show educational concern. Since the late 1960s, Florida legislators have exhibited this concern, developing programs and laws focusing on functional illiteracy and educational accountability. The 1976 Educational Accountabilities Act mandated new minimum graduation standards for the graduating high school class of 1978-79. The Florida Statewide Assessment Program was to "become the focal point for determining student mastery of the basic skills and functional literacy" (Fisher, 1978, p. 599). This program extended through grades 3, 5, 8, and 11. The Functional Literacy Test, completed in May 1977, tested students in the areas of communication and mathematics.

During the same time period, "a call for new standards for educational achievement began to emerge" and "with the explosion of the community college system and the growth of the state university system from three to nine institutions,

access to higher education increased rapidly" (Postsecondary Education Planning Commission, 1988, p. 3).

Student performance on statewide tests sparked interest in college skills preparation levels. To this end, the legislature required students to pass either the SAT or the ACT prior to admittance to the state's colleges of education (Postsecondary Education Planning Commission, 1988).

Competency-based education in Florida's higher education system was then examined as students were entering community colleges and universities with varying levels of competency in basic skills. The state legislature mandated the development of a statewide college-level testing program in 1979. Minimum standards of college-level skills in communications and mathematics were drafted to ensure "all students who complete their sophomore year in college have achieved the communication and computation skills expected of them" (Blee, 1986, p. 83). The Florida legislature directed the State Board of Education to adopt minimum standards for college-level communication and computation skills. As originally conceived, the College-Level Academic Skills Test (CLAST) was "an achievement test that measures skills in computation, reading, and writing" (Postsecondary Education Planning Commission, 1988, p. 7).

The Florida State Board of Education authorized the development of tests designed to measure the agreed-upon skills. Specifications were drafted for the test items and procedures for assessing the skills (Blee, 1986). The

setting of standard scores was proposed by Florida faculty members and other individuals who would be affected by the standards. The skills necessary for each competency area were determined and standards were set through a procedure established by the Department of Education. However, the scope of the undergraduate experience was narrowed as an outcome of improving the minimum college-level skills because the student had limited opportunities to enroll in elective courses since CLAST-related coursework overshadowed the curriculum (McCabe, 1987).

For the purposes of Florida's college-level testing program, a criterion-referenced test format was chosen. It required that all Florida two-year students pass all four sections (score at or above the cut scores) of the CLAST to obtain an Associate of Arts degree and/or continue at the junior level at any public Florida university (Belcher, 1984b). Additionally, all students who enter a university as a freshman must meet the same CLAST requirements. Therefore, the criterion-referenced test format was utilized because "academic skills tests are successful . . . because . . . they involve criterion sampling" (McClelland, 1973, p. 7) and will "ascertain an individual's status with respect to some criterion, i.e., performance standard. . . . The meaningfulness of an individual score is not dependent on comparison with other testees" (Popham & Husek, 1969, p. 2). Belcher (1984b) found enough items and score variability on

the CLAST to allow traditional reliability approaches to be used.

According to Popham and Husek (1969), a criterion-referenced item should be "an accurate reflection of the criterion behavior" and "represent the class of behaviors delimited by the criterion" (p. 4). CLAST passing scores or "standards" are represented by scale scores, determined through a statistical process that converts the number of correct items on each test form to a common scale. Belcher (1984b) found that "the Computation portion of the CLAST had the highest reliability. . . . The Writing subtest consistently had the lowest reliability" (p. iv). Additionally, Belcher (1984b) found that "the main concern regarding the Reading subtest was . . . the number of students who failed to complete all items" (p. iv).

Although Ellwein et al. (1988) asserted that standards and competency tests function more as political and symbolic gestures than instrumental reforms, the state of Florida has been using the CLAST since 1982 (Belcher, 1989). According to Popham and Husek (1969),

> in situations where one is only interested in whether an individual possesses a particular competence, and there are no constraints regarding how many individuals can possess that skill, criterion-referenced measures are suitable. . . . The meaning of the score . . . flows directly from the connection between the items and the criterion. (p. 3)

The Florida legislature, in 1982, laid the groundwork for the state testing program. Funding and statutory authorization for the initial implementation of the testing

program, College-Level Testing Program (Section 229.551 (3) (j), F. S.), was provided, beginning in October 1982. The mandated assessment program included the College-Level Academic Skills Test (CLAST) and the College Entry-Level Exam. These programs were required by state statute and were designed to measure students' mastery of basic college-level skills in reading, English language skills, and mathematics and to place entering students (Education Commission of the States, 1987). Additionally, the legislature also required students seeking an Associate of Arts degree or admission to upper-division status in a state university after Fall 1982, to present passing CLAST scores (Chapter 82-180, L. F.) (Postsecondary Education Planning Commission, 1988). While achieving their goals, some unintended consequences of the CLAST program have resulted in a legislative commitment to an early identification assistance program targeting at-risk youth (College Reach-Out Program), faculty participating in more formal and informal sharing of instructional materials, stronger articulation and coordination among high school and college faculty in English and mathematics, and statewide conferences and meetings with textbook publishers (Education Commission of the States, 1987).

While the CLAST is an academic skills test, it is successful because it involves criterion sampling. McClelland (1973) believed this type of test is simpler because it can "make explicit to the learner what the criterion behavior is that will be tested" (p. 9) and then

the student and teacher "can coordinate openly in trying to improve the student's score on the performance test" (p. 9).

Some educators (Belcher, 1989; Office of Institutional Research, 1989d, McCabe, 1987) were concerned that increased CLAST cut scores would adversely affect some students. As a result, the Legislature and state faculty and administrators analyzed the current standards and considered options for students who could not meet the higher passing standards (Belcher, 1989).

The cut scores used to certify competency were enacted in three stages, as the original 1989 competency levels would have resulted in too many student failures. During the time that the CLAST has been administered, the passing standards for the essay subtest have been raised twice. The reading, English language skills, and mathematics cut scores have been raised three times (Belcher, 1989). The current passing scaled scores for each of the CLAST subtests in reading, English language skills, and mathematics is 295. The mathematics subtest has the lowest percentage requirement to obtain a passing score, 34 out of 55, or 61% of the items. To obtain a passing score on the reading subtest, a student must get 69% of the items correct, which is 25 out of 36 items. The English language skills subtest has the highest passing score requirement; a student must get 30 out of 35, or 85% of the items correct. However, these requirements vary slightly for each test administration (Gilbart &

Jozefczyk, 1992). The current passing score on the essay subtest is 6 (Florida Department of Education, 1993).

Student Characteristics for Success in College

Several studies have explored demographic factors influencing student success in college (Alfred & Lum, 1988; Anderson, 1985; Terenzini, 1982; Tinto, 1988; Willingham, 1985) including age, gender, and ethnicity, as well as environmental characteristics. Higher education researchers and administrators have analyzed student populations to identify demographic and environmental factors related to student success and to suggest curriculum revisions to college programs based on identified characteristics. They analyzed what constitutes student success and how to promote it, while maintaining and encouraging retention (Terenzini, 1982).

Tinto (1988) asserted that "effective retention and the involvement of individuals in the social and intellectual life of the college are one and the same. It is not a singular process but is marked by distinct stages" (p. 453). Tinto studied the progression individuals followed as changes occurred in their lives. He analyzed the stability of communities and societies and focused on the stages associated with separation, transition, and incorporation. He studied the ceremonies and rituals individuals pass through.

Using Tinto's (1988) perspective, freshmen first entering a community college might be viewed as entering a new culture. In addition to encountering unfamiliar people and confusing systems, freshmen enter the campus environment with little knowledge of what to expect. Some students enter with skills below the level required for college-level work and must enroll in preparatory classes to improve their skills to a college-level.

New students adjusting to a new environment go through stages similar to people adapting to an unfamiliar culture containing a new set of rules, regulations, and customs. Many students do not realize how the collegiate environment can and will affect their lives (Banning, 1989). These students must learn to adapt, acquire new skills, and cope, or they will fail and eventually leave the collegiate environment.

Oberg (1972) believed that if people did not fully adapt to an environment after a period of trying, they would leave that environment. If people stayed, they accepted certain changes, acquired an understanding of the environment, and adapted their behavior to fit into the environment. Oberg's theory of culture shock paralleled the adjustment process students must go through to adapt to college, pass any exit examinations (in Florida, the CLAST), and graduate. Florida college students who do not pass the exit examination (CLAST) on the first attempt might be viewed as not fully adapting to the college environment, as all the skills needed to pass the

CLAST were not mastered. These students need to determine what is necessary to pass the CLAST. Further adaptation to the educational environment must occur, possibly by learning new study skills and/or remediating deficient subject area skills.

Tinto's assertion parallels Oberg's model in that the greater the integration into a society or college, the greater commitment to that community or institution. Tinto (1988) stated:

> The general notion of stages of passage may be seen, therefore, as applying as well to the separate passages new students have to make to both the social and intellectual (academic) life of the college . . . each may have formal and informal dimensions that reflect the formal and informal life of the communities of the colleges. (p. 448)

Colleges provide ways for students to acclimate to their environment by offering review classes, self-study material, support systems, extra-curricular activities, and counseling to help facilitate academic and social integration. Meeting other students with the same goal (in this case, passing the CLAST) might provide a forum to discuss solutions. Instructors may provide opportunities for mentoring and problem solving. Additional opportunities to practice test-taking skills might yield opportunities to assess the chances of success on additional attempts.

Increasing student options by offering intensive learning experiences and making the entire college experience more relevant to the student might increase student satisfaction with an institution. High academic and social

integration was positively related to increased student retention and academic success (Aitken, 1982; Beal & Pascarella, 1982; Halpin, 1990; Pascarella & Terenzini, 1980; Tinto, 1985). Institutional quality, transfer opportunity, and perceived educational quality were major factors in the significant primary variables of institutional commitment (Bean, 1980).

Demographic Factors

Demographic factors, such as age, ethnicity, and gender, can influence student success. Upcraft and Gardner (1989) pointed out that many times only academic factors are considered and valuable preenrollment variables are not used to evaluate freshman success.

Age

Age might relate to success, when other individual entering characteristics are considered. Farabaugh (1989) stated that age was indirectly related to attrition. Morris' (1988) findings revealed negative correlations between older students and persistence and that age was the second highest measure of persistence. Martin (1989) and Pantages and Creedon (1978) found that age was a significant variable.

Age also might be a factor in CLAST performance. Belcher (1984a) found that 63% of the students who passed the CLAST were in the 21-or-younger category. Fischer (1993) found age made a slight difference in the passing rates on reading and essay subtests, but the passing rate quickly

declined after age 18 for the ELS subtest. Additionally, she found that Caucasians, Asians, American Indians, and males in the 18-20 age range had higher passing rates in mathematics than students in any other age, ethnic, or gender categories. With the exceptions of the ELS and mathematics subtests, there was very little difference in the passing rates.

Gender

Gender might relate to student success. Females had a slight advantage on the verbal subtest and males had a slightly greater, but still small, advantage in mathematics on the SAT and other standardized tests (Clark & Grandy, 1984; Wilder & Powell, 1989). However, Wilder and Powell (1989) indicated that although men were better at quantitative tasks, they couldn't support the premise that women were better at verbal tasks. Morgan (1989) accounted for some of the differences between male/female SAT scores as the result of differences in background variables and coursework. Evans (1977) found no evidence that gender or race was differentially affected by coaching on the GRE-Q. Evans and Pike (1972) found that instruction for mathematics aptitude items was more effective for males.

Other gender differences were noted. Bean and Metzner (1985) proposed that for nontraditional students, gender had "indirect effects on attrition through family responsibilities (positive effects for women) and opportunity to transfer (negative effect for women)" (p. 498). Pascarella, Smart, and Ethington (1986) believed gender had a

positive indirect effect on retention for women. Gille (1985) found that gender was related to persistence. Cope (1978) believed the student's gender was related to retention and his findings showed that more men persisted to graduation. Farabaugh (1989) posited that gender indirectly related to attrition.

Pantages and Creedon (1978) indicated that when considering institutional, environmental, scholastic, and longitudinal factors, gender became more significant. They concluded that gender could be a significant factor for individual college attrition rates, although overall it was not significant. For students in the age range of 15-19, gender was found to influence other predictor variables, especially when men and women were studied separately (Bean, 1980). When comparing male/female SAT scores, Clark and Grandy (1984) found that women's scores have declined more over the last 15 years. Other findings revealed that the characteristics of both groups of test-takers have changed. Clark and Grandy (1984) concluded that "studies consistently demonstrate slightly higher correlations between the predictors and college grades for women; however, the first-year grade point averages of women tend to be underpredicted slightly, perhaps because women frequently average higher college grades than predicted" (p. 25).

Gender seemed to influence CLAST subtest passing. For students who took the CLAST for the first time in October 1989, more males passed the computation subtest, but more

females passed the reading, ELS, and essay subtests (Fischer, 1990).

Ethnicity

Ethnicity might be a factor when considering student success. The American Association of Community and Junior Colleges (1988) found that African-American and Hispanic students have been least successful in schools and colleges. They also found that minority high school graduates are more likely to attend community colleges than Caucasian high school graduates. Linn et al. (1982) found that minimum competency testing requirements both adversely and disproportionately affected African-American students. Bynum and Thompson (1983) found that whatever the racial majority of an institution was in the freshman year, that majority was much more likely to persist in college than the minority students of any other race. Alfred and Lum (1988) stated that while better grades were more likely to be earned initially by Caucasian students in remedial writing and college English courses, the race/ethnicity variable influence gradually decreased with continued enrollment. Smyth (1990) found that for any combination of coaching and testing, there was no significant differences among races for the PSAT and some SATs.

Ethnicity seems related to passing the CLAST. For the communication subtests, the Caucasian students who took the CLAST for the first time in October 1989 had the highest passing percentage. On the computation subtest, Hispanic

students had the highest pass rate; African-American students had the lowest rate of passing. When compared to African-Americans, Hispanic, and Asian students, Caucasian students had a higher percentage of passing all four subtests than any other group (Fischer, 1990). On the CLAST, black non-Hispanics and Hispanics usually had the lowest reliability coefficients (Belcher, 1984b). She also found that "the sample of failers contained more black non-Hispanic students than did the sample of passers (23% versus 4%). The sample of passers had more white non-Hispanic students (31% versus 15%) and more Hispanics (64% versus 57%)" (1984b, p. 2). CLAST trends at Broward Community College (Office of Institutional Research, 1989c) showed that for the October 1988 administration,

> the passing rate for white non-Hispanic students was 83%, yet only 56% of the Hispanic and the American Indian/Asian/Pacific Island students passed. The lowest passing rate was for the black students, with 41% passing all four subtests, roughly equal to their passing rate in 1985. (p. 1)

Environmental Factors

Most studies tended to confirm the importance of the interaction between the student and the environment as an important factor in student success (Bean, 1980; Pascarella et al., 1986; Pantages & Creedon, 1978; Pascarella & Terenzini, 1980; Terenzini & Pascarella, 1977; Tinto, 1975). Centra and Linn (1968) stated that "the environment is defined by what students generally perceive as characteristic

of their college, their instructors, and their classmates" (p. 1). Boyer (1987) believed that

> colleges should be as committed and creative in helping students adjust to college life as they are in getting them to the campus . . . each university or college has a culture of its own and that culture contributes immensely to the quality of learning. (p. 46)

Therefore, the social and academic systems of a college need to be examined in terms of student success (Pascarella et al., 1986; Spady, 1970).

The first weeks on campus are extremely important as attitudes about college and college life are formulated and new friendships are created. To make the transition to the college environment from work or high school, new students need help (Gordon & Grites, 1984). Boyer (1987) found new students do not have a strong sense of community. In addition, "anomie is not uncommon among freshmen, who come to campus with high hopes, then soon lower their expectations;" however, "other students, after the predictable bump that comes from any major move, soon settle in and become committed members of the college community" (Boyer, 1987, p. 44).

Baird (1974) believed that "environmental information and the decision it may aid eventually need to be tied to the ultimate criteria of what happens to the students and the staff who live in colleges with different features or who participate in different programs" (p. 312). Rock, Baird, and Linn (1971) and Rock, Centra, and Linn (1969) found that a college has an effect on mean student achievement for

different types of students. Their findings suggested that the colleges might be differentially effective.

Grade point average

One measurement of predicting student achievement was grade point average (GPA). Most research indicated that academic success within the student's first semester was the greatest indicator of overall success and persistence. Pantages and Creedon (1978) found that good grades served as effective reinforcers. Thomas and Andes (1987) concluded that persisters consistently earned higher grades than potential dropouts and stopouts.

Bean and Metzner (1985), Blanchfield (1971), Pantages and Creedon (1978), and Tinto (1975) reported findings that demonstrated that first semester GPA and first year GPA were useful in evaluating student performance. In a study conducted at St. Petersburg Junior College, Fischer (1993) found that a student had a better chance of passing the CLAST if 24 or more credit hours were completed. Additionally, the higher the student's GPA before taking the CLAST, the better the chances of passing all four subtests. However, researchers at Broward Community College (Office of Institutional Research, 1989a) reported that some students had high grade point averages (3.5 or higher) and still did not pass the CLAST on the first attempt.

Enrollment status

The amount of credit hours attempted might influence student achievement. Students are considered full-time if they are enrolled for 12 or more credit hours; part-time enrollment occurs when less than 12 credit hours are attempted. Bean and Metzner (1985) found younger students less likely to enroll part-time and showed a lesser rate of attrition than part-time students. The increase in the number of older students and part-time students is likely to affect projected outcomes for community college students. Fischer (1993) found that the CLAST passing rates were higher for students who both worked full time and had full course loads rather than for students who did not work or were taking fewer credit hours.

Faculty interaction

Social interaction with faculty related positively to environmental adaptation and student success (Ferguson, 1990; Tinto, 1975; Tinto, 1982). This would seem to relate positively to enrollment status, as a full-time student would encounter more faculty each semester than a part-time student. Full-time status might then foster success as faculty are in a position to "spot the student's difficulties quickly and . . . refer the student for assistance. The faculty member's initial observation can be the crucial factor in a student's receiving the help needed for survival and success in college" (Ferguson, 1990, p. 134).

There was an exception to the findings that increased faculty contact helped retention. Thomas and Andes' (1987) research contradicted many other studies and revealed the number of hours spent with faculty and staff outside of class did not relate to retention. However, they stated that their research did not exclusively consist of faculty-student contacts, which might have skewed their results.

Test Preparation Strategies

Various strategies have been devised to help students achieve higher scores on standardized tests. These strategies consist of review classes (which incorporate coaching and testwiseness), self-study methods and materials, and completing required college courses. However, researchers have not formed a consensus concerning the best way to prepare for a standardized test. Powers (1980) believed that most students felt that some preparation was effective, resulting in most students using at least one preparation strategy and the majority using more than one method of preparation. Therefore, prospective examinees need to decide what strategies are available, which are most compatible with their own preparation objectives, and what will help them meet with success (Powers, 1980).

Students should choose selected preparation strategies carefully, as the helpfulness of these preparation strategies is inconclusive. Powers and Swinton (1964) found differential effectiveness in increasing test scores was

achieved by various test preparation strategies. Powers (1987) found that "skills needed to benefit from test preparation may not be the same as the more relevant academic abilities reflected in the test scores" (p. 459).

There are diverse reasons why not all students pass standardized tests. Some students are not good test takers. Other students do not have the basic subject knowledge or cannot apply their knowledge to the test format. Additionally, some students do not understand the directions or what is expected. Lastly, some students simply are not prepared at test time.

Review Sessions

Coaching students, in the form of review sessions, is a very popular method of test preparation. Coaching is a process with various forms ranging from "teaching students the strategies involved in taking any kind of rigorously timed multiple-choice test" (Dyer, 1987, p. 47) to "diagnosing the kinds of problems with certain item types each student may have, and drilling on the specific kinds of reasoning each student may be having trouble with" (Dyer, 1987, p. 47). Behrman, Dark, and Paul (1984) found there were positive short-term and long-term effects on academic performance involved in an intervention of structured learning skills. Cameron (1989) found that activities which resembled rigorous coursework were the most effective types of coaching.

Many researchers found that coaching for achievement tests, such as the SAT, did not improve the test scores enough to give the coached students an unfair advantage over uncoached students (Alderman & Powers, 1991; Cameron, 1989; Dear, 1958; Hanford, 1991; Kulik et al., 1984). Swinton and Powers (1985) found test preparation and test scores were not significantly related. Becker (1990) stated the effectiveness of coaching was not proved after an analysis of 48 studies. Garvey (1981) found the effects of special preparation for the SAT to be inconsistent in that some students might significantly increase their test scores while other students might find test scores have declined.

The helpfulness of coaching has been greatly debated, especially for standardized tests. Fueyo (1977) studied nonsupportive data on coaching and test practice and concluded that some researchers found there was no significant difference in test performance due to coaching, practice, or training. However, Garvey (1981) stated:

> There is general agreement that as special preparation moves from short-term drills and cramming to formal instruction of sufficient quality and duration in reading comprehension and mathematical concepts (whether through intensive independent study, additional academic courses, wide-range reading, or extended educational experiences such as an 8-10 week course with homework) greater improvements can be expected in a student's admission test score. (p. 134)

Test-taking strategies and the qualifications of the instructor might make a difference in test performance. In an analysis of test-taking skills strategies, Fueyo (1977) concluded that significant differences on test performance

can be achieved by coaching (nonspecified assistance) and practice (repeated test taking), but there were also differences among the trainers. Students obtaining verbal praise and reminders from instructor-aides or counselors were able to monitor themselves better and improve their study skills (Kremer, Aeschleman, & Peterson, 1983). Fueyo (1977) believed that instead of test item content, knowledgeable coaches should focus on skills deficiency in test taking.

Studies have shown that the SAT is not a definitive test to determine effective formal schooling. Turnbull (1985) felt that people who "reject the SAT as a barometer of schooling are on firm ground . . . the scores are not affected only by formal schooling; they measure abilities that are developed both in and out of school" (p. 1). In a meta-analysis investigation, Kulik et al. (1984) concluded that small coaching effects were reported on the SAT while substantial effects could be seen for coaching other tests. Messick and Jungeblut (1981) stated that the SAT was "explicitly designed to differ from achievement tests in subject-matter fields . . . its content is drawn from a wide variety of substantive areas" (p. 192). They pointed out that the SAT was not specifically related to an individual course or subject area and that comprehension and reasoning necessary for all subject areas and all levels was stressed. Slack and Porter (1980) believed the SAT to be a "standardized test of achievement and . . . a third-rate predictor of college performance" (p. 171). Airasian (1989)

stated that exit testing and the SAT were different in that the SATs were "elective, designed to measure abilities not achievement, used to select not to certify students, and have different performance standards for satisfactory pupil performance depending upon the college to which the pupil applies" (p. 57).

In a study of able seniors in high school, Dyer (1953) theorized that coaching improved the verbal SAT score by a negligible amount and mathematics coaching would be advantageous only if the student was not enrolled in a mathematics course at the time of coaching. Concerning the SAT, Cameron (1989) found that most studies agreed that coaching or short-term instruction is least effective on the SAT. Becker (1990) disagreed, stating "coaching can help increase SAT scores" but that "not all coaching is necessarily effective and that all studies of coaching do not provide similar views of coaching's effectiveness" (p. 373).

Smyth (1990) found that SAT preparation made sense and some students found the structure or tutoring of a course helpful, but, on the average, scores increased only slightly over the uncoached students. In addition, he cautioned that, on the average, the impact of coaching is small and that a group with lower starting scores can be expected to have greater average gains, regardless of coaching. Becker (1990) found that various studies did not agree on the effectiveness of coaching but that SAT scores could be increased. Additionally, modifying students' test-specific knowledge,

with the goal of increasing test scores, is at the heart of coaching (Becker, 1990).

Other standardized tests, such as the GED, GRE, and MAT, show differing results due to review classes. Studying the effects of retesting, study, and coaching on the General Education Diploma (GED) test scores, Jones (1954) found the GED highly resistant to special preparation. Spielberger (1959) found that Miller Analogy Test (MAT) scores improved with practice. Furthermore, alternate forms of the test were unrelated to test score improvement. Powers (1987) found "little, if any, difference among subgroups of examinees with respect to their response to the particular kind of test preparation . . . no particular subgroup appeared to benefit significantly more or significantly less than any other subgroup" in regard to coaching for the analytical section of the Graduate Record Examination (GRE) (p. 247). Evans (1977) found that an overall coaching program resulted in small, consistent increases in GRE-Q scores, but these gains were made early in the program. Behrman et al. (1984) concluded students enrolled in a structured learning-skills intervention gained more positive short-term and long-term benefits in regard to academic performance.

Providing encouragement improved time categories for GRE test takers, and analytical scores improved slightly when students received test-taking hints; receiving feedback in the form of practice test question explanations was not effective in raising analytical scores (Powers & Swinton,

1984). Garvey (1981) found evidence that "underachievers (those who do not perform well on standardized admissions tests in light of their previous grades in school, class rank, and personal characteristics) might benefit more from special preparation than students of higher developed academic abilities" (p. 134).

Cole (1982) concluded there was little difference between expensive commercial coaching and free, school-based coaching for the SAT and that the quality of both types of instruction widely varies. Regardless of the amount of time spent on homework or in the classroom, short-term coaching had a negligible impact on SAT verbal scores but did show a relatively small but statistically significant improvement on mathematics scores (Smyth, 1989).

Hanford (1991) found that a student scoring between 200 and 400 had a better statistical chance of improvement on a retest, even without coaching, than a student with scores in the 650 to 800 range. In fact, the students in the upper end of the scoring scale, even with coaching, would probably see scores decline. Powers (1981) felt that preexamination instruction could influence examinees and that relatively subtle changes in test-taking behavior could be linked to specific instruction. Smyth (1990), analyzing other studies, concluded that the coached group had lower average starting scores on both the verbal and the mathematics tests than the uncoached group. He found that "each author cited the 'regression to the mean' effect, and noted that one can

expect a group with lower starting scores to have greater average gains regardless of coaching" (p. 7). Additionally, he posited that coaching interventions have a small average impact. Becker (1990) concurred, stating that "the gains expected from growth and retesting may not be equivalent even for groups from the same study" (p. 379).

Special instruction did not benefit all students equally (Bond, 1989). He found that the students who might benefit the most were students with high school records of inconsistent test performances and poor test-taking strategies. Cole (1982) found normal school achievement and practice, without coaching, contributed to definite average score increases. Cameron (1989) found that although not all coaching was effective for all students, the effects of coaching were relatively modest. Additionally, there was no improvement in scores for some students who participated in the coaching activities. Becker (1990) found that coaching effectiveness studies results varied greatly because many studies did not have comparison groups. In addition, the size of the coaching effects were related to the length of the coaching interventions and the study design.

Many Florida community colleges offer reviews for the CLAST. These CLAST review classes/courses incorporate review of basic reading, English, and mathematics skills; review of test-taking strategies; and practice tests. This structure parallels the coaching curricula offered by commercial SAT coaching schools, which include "teaching test-wiseness and

exam taking techniques, short-term instruction which includes substantive content, or intermediate-term instruction . . . [and] utilize written materials, commercially available review books, and self-designed review books and materials" (Garvey, 1981, p. 56).

Studies concerning helpfulness of CLAST review sessions have revealed varying degrees of helpfulness. Belcher (1985) concluded that the passing rate on the reading section of the CLAST would increase slightly with extra work in testing skills and that in the computation section, test-taking strategies would not be of value. She concluded that if undertaken, writing section activities probably would most improve students' test-taking strategies.

The concept of test familiarity/testwiseness (tw) encompassed many skills, including differences in test administration, timing, and item format. Taking a review course and/or practice tests would familiarize students with the test organization and structure. According to Bond (1989), testwiseness has been a factor in reducing test anxiety and increasing confidence. Belcher (1985) defined testwiseness as the extent a student can take advantage of the testing situation. She believed students exhibiting testwise skills would

> make judicious use of time by pacing themselves through the test, budgeting the amount of time spent on any item with which they are having difficulty . . . use includes inherent in the item as well as reasoning and knowledge of the subject matter in guessing which of several responses may be correct for those items in which they are unsure of the answer. (p. 1)

If personal consequences were minimized, many people will not feel threatened by examinations (Sax, 1980). Fueyo (1977) pointed out that unfamiliarity with a standardized test format or standardized test situation can penalize both children and adults. She further noted there were many skills and factors which influenced test performance.

While some testwiseness instructional interventions can improve skills that might have remained stable (Fueyo, 1977), others can have little or no effect. Kreit (1968) found that some practice was related to acquiring test-taking skills but additional practice after the first test session provided little or no improvement. Borrello and Thompson (1985) indicated that research findings showed a moderate relationship between testwiseness and general mental ability. Additionally, they found that "persons who develop these skills may be generally disposed to employ the skills, regardless of idiosyncratic differences in personality" and that "cognitive skills are apparently the best predictors of both the ability and the inclination to employ test-wiseness skills" (p. 128). Bond (1989) pointed out that if a person had no subject knowledge in the area to be tested, training in test taking would not affect aptitude or subject matter scores.

Completely removing the effect of testwiseness from standardized tests does not seem possible (Crehan, Koehler, & Slakter, 1974). Therefore, special test preparation, consisting of items which are unfamiliar or unusual, might

help students obtain a test score which better reflected ability (Alderman & Powers, 1991). Abu-Sayf and Diamond (1976) found when random guessing decreased, the internal consistency of scores increased.

Research has shown certain student populations, notably Hispanic, can be penalized by a lack of testwiseness skills (Llabre & Froman, 1987). They found the time limit on tests may penalize Hispanic test takers. Additionally, they found that specific language difficulties might affect the test scores of certain populations. Many minorities exhibited poorly developed test-taking skills, which hindered test performance, thereby not always reflecting the students' true skill level or knowledge (Frierson, 1986). Smyth (1989) found that "a lack of familiarity with the test format and strategy (i.e., testwiseness) seems to account for the larger than average gains of students from disadvantaged educational backgrounds" (p. 2).

Crehan et al. (1974) found no evidence to link gender and testwiseness. However, they made the case for teaching testwiseness skills to students low in testwiseness, as

> students penalized on test score because of low tw tend to be penalized not only on different tests at the same point in time, but also in different tests over time; i.e., the student low in tw tends to be penalized every time he takes a test which includes a tw component. (p. 211)

Powers and Swinton (1964) found that the largest impact on SAT analytical scores was a strongly encouraging letter to study with the practice material. They noted practice tests,

followed by explanations and test strategies, was the next most effective method of test preparation. They found feedback to be relatively ineffective. Frierson (1986) believed that providing instruction on effective test taking and practice tests which reinforced the acquired skills were successful in raising standardized test scores. He felt that the major outcomes of such instruction would result in the following: "(1) reduce anxiety, (2) allow the student to feel more in control during test situations. (3) decrease unwarranted errors, (4) increase accuracy, and (5) emphasize the value of having confidence in one's level of knowledge" (p. 42).

Various methods exist to increase testwiseness. A pretest might be an important part of an aptitude test preparation program (Kulik et al., 1984). A test score more indicative of student ability might be obtained when special preparation explained unusual or unfamiliar items (Alderman & Powers, 1991). Duchastel and Nungester (1982) suggested that superior retest performances might result from test practice and learning consolidation. Kulhavy & Kardash (1988) believed that a problem associated with studying how people study was "identifying exactly which category of variables is most important for assessing the interaction between what students *do*, and what they later learn and remember" (p. 25).

Not all students employ the same test preparation techniques. Bragstad (1975) asked students what helped them remember information and found that students liked

understanding logic, using learned information, reviewing frequently, understanding relations among ideas, and knowing why and what they were doing. When asked how they prepared for tests, students preferred working every day (rather than cramming), getting organized, reviewing notes separately and then synthesizing, repeatedly testing themselves on material, conferring with friends on important concepts, and studying in advance to last minute panics (Bragstad, 1975). Kardash and Kroeker (1989) found free recall performance was influenced by the time of a review period. Powers and Swinton (1964) found that evidence for a successful performance on complex items, utilizing some preparation regardless of the type, could be effective for certain test items. Additionally, they found encouraging students to use available preparation materials showed the largest effects. On the other hand, for the GRE, Swinton and Powers (1985) found that test score and test preparation did not have a significant relationship.

Material retention is important when preparing for a test. Duchastel and Nungester (1982) found that material retention was greatly increased by initial testing and that items retested in formats similar to the initial test resulted in the greatest retention. They believed that long-term retention was gained by giving a test after a learning period. Gay and Gallager (1976) pointed out that students retained significantly more when involved in a formal written test situation rather than a written exercise condition or a

choice condition. Retention of prose materials using the postacquisition testing method showed that "knowledge of results did not increase retention for correctly answered immediate questions, and it significantly increased delayed performance for immediate questions incorrectly answered" (LaPorte & Voss, 1975, p. 259). Duchastel (1979) believed increased retention of a passage occurred after testing students on a prose passage. "Taking a test after meaningful learning, like note taking, can probably better be described as offering an opportunity for consolidating (synthesizing) what one has learned rather than on opportunity for simply practicing" (Duchastel, 1979, p. 299).

Evidence is mixed concerning test familiarity and improved test performance. Bond (1989) found that testwiseness involved increasing confidence and reducing anxiety. Einspruch (1988) found a performance improvement for students who retake the CLAST. Kardash and Kroeker (1989) found that "providing students with knowledge about how they would be tested did not result in enhanced performance on criterion measures which matched students' expectancies compared with those which did not" (p. 334). Kulik, Kulik, and Bangert (1984) found that an identical test used for practice provided greater gains and that high-ability students had greater practice effects than low-ability students. In addition, some students either rely on luck, rather than utilizing additional preparation

techniques, or use the initial test as a pretest (Deatsman, 1979).

Self-Study

There is an array of methods and materials students can utilize to embark on a self-study course of action to prepare for a standardized test. Students studying by themselves may reread notes from courses taken in the subject area or areas to be tested. Students might study with computer programs or other study aids, such as test-specific review books designed for the standardized test. They may devise a program of study which might incorporate a combination of techniques. However, Bond (1989) pointed out that if a student has no knowledge in the area(s) to be tested, no amount of training in test taking will affect performance on achievement tests.

The benefit of reviewing notes partly depended upon what type of test was being taken (Kardash & Kroeker, 1989). Kardash and Kroeker (1989) found that "students who take notes remember more than those who do not and that performance on tests is enhanced for students who are given an opportunity to review their notes compared to those who are not" (p. 323). Reviewing notes was not always helpful because if the exam had no retrieval cues, i.e., in free recall, the closer the review period was to the test date, the more beneficial the review. If the test provided retrieval clues, reviewing notes had no benefit. Reviewing closer to test time probably would help focus memory for the

target information at test time (Kardash & Kroeker, 1989). Therefore, as the period of time between the actual presentation and the testing lengthens, the positioning of a review period may become more important and a review period prior to the test might reinforce learning.

With GRE students, those who received preparation materials and were encouraged to use them spent the most time preparing for the test. Swinton and Powers (1985) found that test familiarization of GRE material through self-study of test preparation books and material provided by test sponsors was popular with test takers. Powers (1980) found that the booklet distributed by Educational Testing Services for the SAT was the most often used resource, followed by other test preparation booklets. Dear (1958) found that

> the use of homework . . . motivated students who were taking mathematics to work harder at the practice exercises in comparison to the other coached students than they would have done in a coaching program which was carried on entirely during class periods. (p. 22)

The results of using self-study as an effective test preparation strategy is limited. Smyth (1990) believed uncoached students who studied for the SAT on their own with a guidebook, a computer program, or any other material gained more than students who did not study. However, academic improvement has not been shown using self-monitoring (Kremer et al., 1983). This could be because programs involving mastery learning, although shown to have positive effects on student achievement and were fairly long term, often had low completion rates (Kulik, Kulik, & Bangert-Drowns, 1990).

Powers and Swinton (1964) provided evidence that for coachable GRE items, GRE candidates were able to use effective self-preparation. Van Zoost and Jackson (1974) found "significant gains in self-reported study habits for all conditions at both post-treatment and 6-month follow-up periods" (p. 218) and "the feasibility of training students in self-management skills that subsume and extend self-instructional practices" (p. 218).

Required Courses

Students who enter a community college in Florida take a placement test to evaluate their incoming skills levels in reading, English, and mathematics. These scores determine which classes students may attend. Those students with a preparatory designation (at-risk) may register only for selected college credit courses while progressing through a preparatory course sequence in their area or areas of skills deficiency.

Studies are inconclusive concerning enrollment in preparatory skills courses and later achievement. Belcher (1986) found that later developmental skills performance was not predictable from preparatory work. Alfred and Lum (1988) found the opposite; they felt the remedial placement policy was very significant for predicting long-term student achievement. Losak (1984b) found that there was "a distinct possibility that if the student took one developmental course, that area remains weak and is the 1 of 4 failed on

the CLAST" (p. 2). A study at Broward Community College (Office of Institutional Research, 1989d) revealed that, especially for Hispanic students, a great number of students who did not pass the CLAST were enrolled in preparatory classes. Losak and Einspruch (1989) found that

> all but about 10% of the students who initially attempt the examination have passed all four subtests within one year . . . the overwhelming majority of those who retake and pass the examination are students who initially fail only one of the subtests. Those who fail two or more are less likely to retake the CLAST, and do considerably less well upon retaking the exam. (p. 1)

Losak (1984a) pointed out that although many students are underprepared when entering a community college, they can pass the CLAST, receive an Associate of Arts degree, and enter the State University System.

Belcher (1986) believed there was little correlation between preparatory work and later basic skills performance. Alfred and Lum (1988) found long-range achievement to be more predictable for students enrolled in mandatory placement remedial courses versus lower long-term success rates by voluntarily placed students. McCabe (1987) declared that "available statewide data on CLAST reflect the great effort that colleges and universities have put into program adjustments in response to the test" (p. 7). Guthrie (1984) believed that if "tests measure significant skills on highly valued subject matters that are included in the curriculum objectives . . . the potential for genuine growth . . . is high" (p. 189). Spring (1985) found that poor readers "may rely heavily on study strategies without first having

completely understood the text materials to be studied" and "an emphasis in remedial reading instruction on study strategies may not apply the correction where it is most needed" (p. 157).

Enrollment in some courses seemed to affect test scores. While examining the effect of coursework on the SAT, Morgan (1989) discovered that higher scores were earned by students who took more coursework in foreign languages, natural science, and mathematics. Furthermore, the patterns were fairly consistent with regard to ethnic groups and income levels. Additionally, Morgan (1989) found students with higher GPAs had the strongest correlation between SAT scores and level of coursework but found little relationship between the verbal section of the SAT and the level of English coursework.

Some students either never enrolled in CLAST-designated courses or attempted the CLAST after their curriculum was almost complete. Camp, Drummond, Carter, and Parker (1988) believed the possibility that "some students taking CLAST have never enrolled in courses that may be in the curriculum and are directly relevant to what content experts agree are important" (pp. 966-967). Belcher (1989) discovered, using the Fall 1990 cut scores, that "the best that we can expect from students who already completed the curriculum is that after trying for one year, still only 75% of them will have passed all four parts of the CLAST compared to 90% now" (p. 12). If a student has to learn "new and unfamiliar materials

without the benefit of a subsumption or organizing construct, the learning that occurs is most likely rote because students probably have to memorize the material verbatim" (Alexander, Frankiewicz, & Williams, 1979, p. 706).

Certain reading, composition, and mathematics courses are designated as CLAST-related courses and are recommended for students to complete before taking the CLAST. A study at Broward Community College (Office of Institutional Research, 1988) found that "many students who enroll in college preparatory courses may not be persisting to the college-level even when they have met the remedial requirements" (p. 3). Additionally, students not requiring remediation usually needed to refine their essay skills (Office of Institutional Research, 1989b).

Landauer and Ainslie (1975) reported that

> a relationship between the amount of use and the amount of loss over a year would seem to suggest that it is a potentially serious matter for a student to take a course more than a year before he will used its contents. (p. 104)

Additionally, they found that course-acquired knowledge should be supplemented by small amounts of properly spaced review activities to ensure retention. Fischer (1993) found that

> students had a higher probability of passing the reading subtest if their GPA in reading courses was greater than 2.50 and of passing the CLAST if it was greater than 3.50. The probability of passing the English subtest exceeded 50 percent when the English GPA was greater than 2.50. When the mathematics GPA was greater than 2.50, the passing rate for the mathematics subtest greatly improved. To achieve a comparable passing rate for the CLAST required a mathematics GPA of over 3.5. (p. 2)

Summary

The testing of students to determine their basic skills competency is an integral part of the educational environment. The state of Florida mandated a competency test, the College-Level Academic Skills Test (CLAST), to assure that all community college students seeking an Associate of Arts degree and all students enrolled in four-year institutions who are leaving the sophomore level have learned certain basic skills and concepts in English, reading, and mathematics before these students are allowed to continue their education as a junior at a Florida four-year institution. However, not all students initially pass the CLAST. These students must retake and pass the CLAST in order to continue their education.

Research has found various ways to improve test performance, although the experts cannot agree which strategy is the most effective. Rather, different strategies work for different students. These strategies include review sessions, coursework in skills areas, and self-study with a subject area specialist (professor, tutor, knowledgeable friend) and/or CLAST-related material (located in a campus library or media center). Awareness, availability, and utilization of these methods might help student performance.

Knowing the preparation strategies of at-risk students who passed the CLAST on the first attempt would be valuable

to administrators. Administrators could institute review sessions and provide academic advisement for all CLAST candidates with regard to required CLAST-related academic courses. Additionally, individualized self-study plans might be recommended for students who want to study on their own or cannot attend review sessions.

Students who will be sitting for the CLAST for the first time would also benefit from learning successful CLAST preparation strategies. Students would become more aware of what skills are needed to pass the CLAST, what help and materials are available before taking the CLAST, and ways to maximize passing the CLAST on the first attempt.

CHAPTER 3
METHODOLOGY

The purpose of this study was to determine the relationship between test preparation strategies and performance of at-risk students who sat for the CLAST for the first time. Information was needed to improve CLAST preparation strategies. Information was obtained regarding students' preparation strategies, perceived helpfulness of these strategies, and how use of preparation strategies related to CLAST scores.

This research fulfilled this purpose by answering the following questions:

1. How helpful did the students perceive CLAST review sessions for passing the CLAST?
2. How helpful did the students perceive CLAST self-study for passing the CLAST?
3. How helpful was completing CLAST-related courses for passing the related CLAST subtests?

The qualitative case study method was chosen for this study. Case study research was necessary to explore and describe why certain at-risk students who sat for the CLAST for the first time failed the CLAST. Merriam (1988) stated four essential components of a qualitative case study: "particularistic, descriptive, hueristic, and inductive" (p. 11). This study satisfied all four components. First, it

was particularistic, as it focused on a particular situation. Second, it was descriptive because the students, their perceptions of their preparation strategies, and the CLAST results were explored and described. Third, it was heuristic because it offered insights, evaluated, and summarized the phenomenon of at-risk students during a CLAST administration at the selected community college. Finally, it was inductive, as inductive reasoning was used in understanding and interpreting the perceptions of the test preparation strategies of at-risk students.

The case study was the examination of a specific phenomenon, the preparation strategies at-risk students perceived to be useful and therefore used to prepare for the CLAST and the results of that preparation, as shown by CLAST scores. The ways for these students to pass the CLAST on the first attempt were explored.

The case study research design was chosen because "insight, discovery, and interpretation" could be gained by "concentrating on a single phenomenon" and therefore "uncover the interaction of significant factors characteristic of the phenomenon" (Merriam, 1988, p. 10). Merriam (1988) referred to the case study as a "particularly suitable methodology for dealing with critical problems of practice and extending the knowledge base of various aspects of education" and that it "is often the best methodology for addressing . . . problems in which understanding is sought in order to improve practice" (p. xiii).

Surveying and interviewing were the two methods chosen to gather data. The questionnaire was chosen for the first instrument of research because survey research allows individuals to be studied as units of analysis. It is the best method to collect original data in order to describe a large population that can not be observed directly (Babbie, 1986). Additionally, survey research yields information concerning relationships and effects of treatments. It provides data on what existed and information on relationships between variables (Ary, Jacobs, & Razavieh, 1990). Moreover, survey data can be used for making descriptive assertions which would show the distribution of certain attributes or traits. Finally, survey research serves as an exploration at the beginning of the study, as in the pilot study (Babbie, 1973).

In survey research, the questionnaire is the most common means of data collection (Babbie, 1986; Borg and Gall, 1983). On the questionnaire used in this study, the students were to recall the study strategies used and the helpfulness of each strategy for passing the CLAST.

The interview was chosen to obtain additional insights and overall impressions concerning the CLAST experience. Interviewing allows much greater depth in collecting data. Furthermore, information could be obtained that might not have been revealed in other circumstances (Borg and Gall, 1983). Merriam (1988) believed that the interview is necessary when one needs to know the behavior, feelings,

and/or reactions of how informants interpreted their world. Wolcott (1988) defined an informant as "an individual whom one invests a disproportionate amount of time because that individual appears to be particularly well informed, articulate, approachable, or available" (p. 195).

Borg and Gall (1983) believed that adaptability was the main advantage of the interview. They believed that more data and greater clarity could be achieved through the interview process. Additionally, they found that fairly consistent interview and questionnaire responses were obtained for fact and yes/no items and more complete information was likely to be obtained when "open-ended questions pertaining to negative aspects of the self needed to be asked" (p. 437).

Of the students who returned the questionnaires, 59 were chosen for telephone interviews to obtain more detailed comments concerning CLAST performance, CLAST preparation methods, and overall reactions to the CLAST. Structured formal interviews were conducted. A CLAST interview guidesheet was used while interviewing these students to insure uniformity of questions (see Appendix E). Clarification was requested for all answers not fully explained or unclear. Additional comments and reactions also were solicited.

Merriam (1988) listed three basic ways to record interview data: tape-record, take notes, and memory (write

down as much as remembered after the interview). Notes were taken while students were interviewed via telephone.

The research was carried out in five stages. The initial stage consisted of the pilot study. Stage two was developing the procedures for questionnaire collection. The third stage consisted of data compilation procedures. Stage four consisted of interviewing students. The final stage was the analysis of data.

Pilot Study

A pilot study was conducted to collect data concerning the effectiveness of the survey instrument, the distribution and collection of the questionnaire, and the time necessary for questionnaire completion, as the researcher wanted feedback from the research subjects. Borg and Gall (1983) suggested that a pilot study was essential in developing a sound research plan, as it led to improved research. They felt that 2-20 subjects were sufficient for the pilot study.

The pilot study should contain most of the components of the main questionnaire and methods to evaluate any pitfalls contained in the survey instrument (Babbie, 1973; Jaeger, 1988). Babbie (1973) believed the pilot survey should be given to respondents representative of the target population and the pilot survey administration should match final survey administration.

The pilot study was conducted in two stages. For the first stage, selected review classes of students who sat for

the October 1992 CLAST were chosen. Ten additional students who sat for the October 1992 CLAST were selected for the second pilot study.

First pilot study

The selected community college, located near the west coast of Florida, offered CLAST review sessions in reading, mathematics, and English language skills/essay, starting six weeks before each CLAST administration. One review class in each CLAST subject area was selected to survey students sitting for the October 1992 CLAST. According to the CLAST review session instructors, the students in these review classes were a representative sample of typical review students. Both students who sat for the CLAST for the first time and retesters answered the questionnaire.

Fifteen CLAST review students were surveyed. Three students were enrolled in the reading review and seven students were enrolled in the mathematics review. Three students were enrolled in the English language skills review while two students were enrolled in the essay review.

To determine the clarity of questionnaire directions and questions and to estimate the time to administer the questionnaire, the students in each review session were instructed to fill out a CLAST subject area questionnaire and to ask questions to clarify any unclear items. Jaeger (1988) believed that results from the pilot study needed to be analyzed to determine what had to be changed and what could remain as planned for the study. Babbie (1973) felt the

pilot study could contain more questions than the intended number for the final questionnaire so as to evaluate them through the pilot survey. He also believed that the collecting, manipulating, and understanding of data were important to survey research.

The pilot study revealed that revisions were necessary. While the first question and the personal section on all subtest area questionnaires were clear, the other questions did not yield accurate information. Several students had difficulty understanding some directions. It was not clear to some of the students how to use the format. Many students omitted checking the study method they found the most helpful.

Most students had specific suggestions for questionnaire improvement. Some reading students marked "most helpful" more than once when asked which item was the most helpful study method used. The English language skills/essay review session students felt terminology changes should be "CLAST essay review" and "English language skills review." As the essay review session directly followed the ELS review session and was taught by the same instructor, these students felt a combined questionnaire would be equally effective. The instructor stated that most students stayed for the combined session. The mathematics review session students had no questions.

After analyzing the questionnaire and responses, the focus of the study was changed from studying students who sat

for the CLAST for the first time and students who were retaking one or more CLAST subtests to studying the performance and perceived effectiveness of the preparation strategies of at-risk students who sat for the CLAST for the first time. Modifications were made to the survey instrument to clarify ambiguities and omit questions not directly related to the revised purpose of the study. The four subtest area questionnaires were combined into one comprehensive questionnaire. The entire format of the survey instrument was redesigned to facilitate the evaluating of the study strategies used. A Likert rating scale was added for ease of recording the helpfulness (effectiveness) of each study method. An additional question, number 10, was included to obtain student feedback.

Certain questions were modified to simplify directions and facilitate verification of answers. The demographic information page was eliminated as a separate page and was combined with the comprehensive questionnaire to form a one-page questionnaire. A space for social security number (SSN) was added to identify students who omitted the college student identification number and nonstudents who chose the college as a test site.

Once revised, the survey instrument was reviewed for content and style. Dr. John Nickens and Dr. Linda Behar, both from the University of Florida, had input concerning directions and format. Two CLAST instructors, Ms. Karen Sidwell, CLAST ELS/essay instructor, and Ms. Ann Cascarella,

CLAST mathematics instructor, both from St. Petersburg Junior College, made suggestions concerning CLAST skills questions.

Second pilot study

Jaeger (1988) felt an additional questionnaire or interview protocol might be needed to obtain more data concerning clarity of questions and directions. Therefore, to see if the revised questionnaire eliminated the problems in the first questionnaire, the revised questionnaire was tested. Ten students who took the October 1992 CLAST and did not participate in the first pilot study evaluated the revised questionnaire for clarity and administration time. These students stated they had no trouble following the directions and had no further questions, revisions, or comments. As the students in the second pilot study had no difficulty with the survey instrument, data could now be gathered concerning preparation strategies used and perceptions concerning the helpfulness of the strategies.

Procedures for Questionnaire Collection

The CLAST is administered statewide each year on the third Saturday in February and on the first Saturdays in October and June (Gilbart & Jozefczyk, 1992). The February 1993 CLAST administration was randomly selected for this study.

The rationale for using a CLAST administration was threefold. First, students may retest at three specified times during any given year, thereby enabling these students

to graduate whenever all graduation requirements are completed and passing scores on the CLAST are achieved. Second, some students are enrolled on a part-time basis, thereby passing the CLAST and completing graduation requirements during different semesters. Third, some students may not appear on any CLAST data records because they stop out or drop out before taking the CLAST or before completing CLAST requirements.

All students at the selected community college who sat for the CLAST registered in advance. Approximately 2 weeks before the test date, a college-generated letter informed students of their assignment to a specific campus, building, and room (see Appendix A).

With permission from the selected community college, a letter of transmittal (see Appendix B) and a CLAST questionnaire (see Appendix C) were enclosed in the college mailing. At this point, it was impossible to identify at-risk students; therefore, the questionnaire was sent to all students sitting for the February 1993 CLAST. The students were instructed to bring the completed questionnaire to the test site on the day of the test.

The researcher called the campus test site administrator to obtain a list of room supervisors. Each room supervisor was then mailed instructions to read to the students to ensure uniformity of survey collection procedures and distribution and collection of additional questionnaires (see Appendix D). The initial stage of the data collection was to

collect the completed questionnaires from the students before they started the CLAST. Students who did not return the questionnaire were asked to complete a questionnaire at the test site and return it to the building survey collector.

After all students left the assigned room, the room supervisor returned the completed questionnaires to either a building questionnaire collector or the campus test site administrator. The test site administrator and the building questionnaire collectors forwarded all questionnaires to the researcher.

Follow-up procedures, in the form of additional questionnaires, were available after test completion for students who failed to return the initial questionnaire. Each completed questionnaire was returned to a building questionnaire collector. The researcher collected the additional questionnaires from each building questionnaire collector.

Data Compilation Procedures

The questionnaires were sorted into three groups: (a) questionnaires containing student college identification number with or without social security number, (b) questionnaires containing social security number and no student college identification number, and (c) questionnaires not containing social security number and not containing student college identification number. Students identified from group one were included in the study. Students from

group two qualified for inclusion if they were identified on the "College-Level Academic Skills Test Institutional Roster of Examinees" provided by the Florida Department of Education. Students from group three were immediately disqualified. All students from groups one and two were consolidated. Their student identification numbers were entered into the selected community college mainframe computer to obtain Individual Prescriptive Evaluation Records (IPERs). IPERs could not be obtained for students with missing records and these students were then dropped from the study.

Examination of the IPERs eliminated additional students. IPERs were checked for college placement test scores and students not at-risk were eliminated from the study. Students whose placement scores were incomplete or missing also were dropped from the study. All transfer students from private institutions were excluded as well as any student who was not a United States high school or GED graduate. Students enrolled in the Deaf Studies Program also were excluded.

At-risk students were selected to be the subject of this study, as these students had a low success rate of passing the CLAST. Nickens (1988) found that repeat failures were usually students who didn't take high school college preparatory courses or else performed poorly in them. This lack of preparation to perform college-level work was reflected in the college entry placement test scores.

Additionally, Nickens found "large percentages of students who failed a particular CLAST subtest did not take the corresponding college preparatory course" (p. 15). Therefore, college placement test scores were used to define at-risk students who sat for the February 1993 CLAST.

The students included in this study graduated from a public United States high school or United States GED program and demonstrated minimum competency in the English language. Students enrolled in both Associate of Arts degree programs and Associate of Science degree programs were studied. Students enrolled in an Associate of Arts degree program were studied because passing the CLAST was required to obtain a degree and to continue studies at a four-year institution of higher education in Florida. Although students enrolled in Associate of Science degree programs were not required to pass the CLAST to obtain degrees, some A.S. students sat for the CLAST since they might continue studies at a four-year institution of higher education in Florida at a later date. Transfer students were included only if the transfer occurred before their first CLAST administration, if their transfer records were complete, and if they did not transfer from a private institution of higher education since those institutions did not use the Florida State University common course numbering system.

The researcher contacted the community college Instructional Test Administrator to obtain a total student count of students who sat for the CLAST for the first time

from the selected campus (320 students). The number of questionnaires collected was 271, yielding a total return rate of 85%. The 21 questionnaires which did not have any student identification numbers were eliminated from the study. The three questionnaire duplicates (three people filled out a second questionnaire at the test site) were eliminated from the study. Additionally, 55 questionnaires were eliminated due to incomplete or missing records or incomplete placement scores. Another 71 questionnaires were eliminated as the students were not at-risk. A total of 115 students met the data collection requirements.

Once the total usable questionnaires were obtained, data were extracted from the questionnaires and recorded to form a data base. Each student's name, age (at the time of the CLAST from date of birth), placement score, gender, and college student identification number were recorded from each student's IPER and questionnaire. All CLAST-related courses in reading, English, and mathematics completed before the first CLAST administration were recorded as were CLAST scores.

Interviews

The interviewer used the systematic sampling method to select the students to be interviewed. As all the members of the group were placed on a list, this method would automatically determine the students to be interviewed (Borg & Gall, 1983). Out of the 115 students who met the data

collection requirements, the interviewer randomly selected every other student from a list of student names. The interviewer called 59 students to interview for additional comments and insights. Using the telephone number listed on each student's IPER, the interviewer made three attempts to contact each student on the list. The interviewer was unable to reach 13 students due to disconnected or changed telephone numbers or because the student was no longer in the area; one student refused to be interviewed; six students did not return the interviewer's calls (messages were left on answering machines or with family members).

When the interviewer reached a student, the student was asked to participate in an interview designed to seek information about CLAST preparation strategies, to determine how the student would improve CLAST scores, and to add any additional comments concerning the CLAST. A script containing guide questions was developed (see Appendix E) for the interview process. From a total of 59 students, 39 students agreed to be interviewed.

Most interviews lasted 10-20 minutes, although the students were not timed and were allowed to speak for as long as necessary to answer the questions. Because the interview was retrospective, questions were asked to check the remembrances of students and were compared to answers given on the questionnaire.

Analysis of Data

Descriptive statistics were used to describe the effectiveness of the preparation strategies of at-risk students. Crocker and Algina (1986) believed that descriptive statistics should be used for a set of observations when summarizing or describing the distribution of values.

To determine the helpfulness of the preparation strategies used by at-risk students, it was first necessary to determine which students were at-risk in each subtest area. An at-risk student could be at-risk in one or more subtest areas. College entry placement test scores were used to determine if a student was at-risk for the reading, mathematics, English language skills (ELS) and/or essay subtests.

Before answering the specific questions proposed in this study, a demographic analysis was conducted. Although all students included in the study were at-risk, not all students were at-risk for each subtest.

The following served as a basis for answering the questions proposed in this study.

Question 1. How helpful did the students perceive CLAST review sessions for passing the CLAST? To determine how helpful the CLAST reviews sessions in reading, ELS/essay, and mathematics were to pass the CLAST, student use/nonuse of review sessions to pass/fail scores were compared.

Additionally, information from the interviews helped to further serve as a basis of comparison and to add additional insight into the study process.

For each CLAST subtest review session, all responses from the very helpful, helpful, somewhat helpful, and not helpful were combined, indicating use of this strategy. To judge helpfulness, the criteria established was that more students passed and used the review session than students who passed and did not use the review session.

To determine the students' perceptions of the helpfulness of the review sessions, the students were asked to rate them as very helpful, helpful, somewhat helpful, not helpful, or did not use. The responses were recorded for each subtest.

Question 2. How helpful did the students perceive CLAST self-study for passing the CLAST? To determine how helpful using self-study (studying with a friend, CLAST teacher, subject area teacher, tutor; CLAST review book; alone; CLAST material in library; and/or CLAST material in Learning Support Center/Alternate Instruction Center) was, the questionnaire responses were tabulated. Each student's self-study responses of very helpful, helpful, somewhat helpful, and not helpful were combined, indicating use of this strategy. To judge helpfulness, the criteria established was that more students passed and used self-study than students who passed and did not use self-study.

To determine the students' perceptions of the helpfulness of self-study, the students were asked to rate their self-study as very helpful, helpful, somewhat helpful, not helpful, or did not use. The responses were recorded for each subtest.

Question 3. How helpful was completing CLAST-related courses for passing the related CLAST subtests? To determine if there might be a connection between CLAST-related courses and test results, an analysis of student IPERs was necessary. The number of courses taken in CLAST subject areas at the time of the first CLAST administration was recorded to determine if the student was at a minimum competency level to pass the subject area subtest. If the student passed the CLAST-designated class with a grade of "C" or better, that student was considered to be at a minimum competency level.

The number of students who enrolled in each CLAST-related course was tabulated. For each subject area, course completion was compared to pass/fail CLAST scores. The academic course for reading was REA 1105, College Reading Techniques; reading was not required for A.S. students. The academic courses (for A.A. majors) for the English language skills and essay subtests were ENC 1101, Composition I, and ENC 1102, Composition II. The required terminal track courses (for A.S. majors) for the English language skills and essay subtests were ENC 1150, Communications I, and ENC 1151, Communications II. The two required courses for both the academic and terminal tracks in mathematics were MGF 1113,

Topics in College Mathematics I, and MGF 1114, Topics in College Mathematics II. Additional coursework in MAT 1033, Intermediate Algebra was an alternative for MGF 1113 in the A.A. track. For each subject area, the courses completed were compared to pass/fail CLAST scores. To judge helpfulness, the criteria established was that more students passed the CLAST and took the preparatory and academic courses than students who passed the CLAST and did not take the preparatory and academic courses.

The responses from the questionnaires and the interview responses were combined in order to gather information about at-risk students at the selected community and their performance on CLAST and to determine the preparation strategies used to prepare for CLAST. After collecting the responses to the specific questions of the study and after all the interview answers were analyzed, it was possible to analyze how at-risk students who sat for the CLAST for the first time prepared for CLAST. Descriptive statistics were used to form an analysis of the study habits, academic preparation, and views on the CLAST of the at-risk student at the selected community college. Perceptions of why they achieved their CLAST scores and what they would do differently to prepare for the retest(s) were also explored.

CHAPTER 4
RESULTS AND DISCUSSION

This study was designed to determine the relationship between the performance of at-risk students who sat for the CLAST for the first time and their selected test preparation strategies.

The following questions were addressed by this study:

1. How helpful did the students perceive CLAST review sessions for passing the CLAST?
2. How helpful did the students perceive CLAST self-study for passing the CLAST?
3. How helpful was completing CLAST-related courses for passing the related CLAST subtests?

Demographics

Each of the 320 students registered for the February 1993 CLAST administration at the selected community college was mailed a CLAST questionnaire and instructed to return the questionnaire to the test site the day of the CLAST administration. The number of questionnaires returned was 271, yielding a total return rate of 85%. A total of 115 questionnaires were from at-risk students and were usable for the study.

The questionnaires were then analyzed according to gender, ethnicity, and age of respondents. The composition

of students by gender was 67 females (58%) and 48 males (42%). The composition of students by ethnicity was 89 Caucasians (77%), five African-Americans (4%), 12 Hispanics (10%), five Asian/Pacific Islanders (4%), and four Other (3%). The composition of students by age was 63 students (55%) in the 18-21 age category, 42 students (37%) in the 22-35 age category, and 10 students (9%) in the 36+ age category.

Demographic information gathered in this study was compared to demographic information for all students from the selected community college campus who sat for the selected CLAST administration. The composition of students by gender was all females (58%) and all males (42%). The composition of students by ethnicity was all Caucasians (87%), all African-Americans (4%), all Hispanics (3%), all Asian/Pacific Islanders (3%), and all Other (2%) (Office of Institutional Resources, 1993).

Demographic information gathered in this study was compared to 1992 headcount enrollment information for all students enrolled at the selected community college. The collegewide female/male ratio was 59%/41%. The composition of students by ethnicity was 89.1% Caucasian, 5.2% African-American, 2.3% Hispanic, 2.0% Asian/Pacific Islanders, 1.0% American Indian, and 0.6% Non-Resident Aliens (Fischer, 1993).

Of the 115 students identified as at-risk, 23 were at-risk in reading, 76 were at-risk in mathematics, and 70 were

at-risk in both English language skills and essay. Some students were at-risk in more than one subtest area. The 115 students were at-risk for a total of 239 subtests.

Research Question 1: How Helpful Did the Students Perceive CLAST Review Sessions for Passing the CLAST?

On the questionnaire the students were to indicate their review session use and to rate the helpfulness of the CLAST reading, mathematics, and ELS/essay review sessions according to the following scale: very helpful (4), helpful (3), somewhat helpful (2), not helpful (1), or did not use (0). It was the intent to compare use of review sessions to passing CLAST scores of at-risk students. The purpose was to determine the helpfulness of the CLAST review sessions in passing the CLAST subtests.

Reading Review Sessions

Of the 23 students at-risk in reading, 9 students (39%) enrolled in the reading review sessions and 14 students (61%) did not. It can be seen from Table 1 that the pass rate on CLAST reading was 44% for students who attended the reading review compared to 29% for the students who did not.

It was strongly suggested from these results that the reading review sessions were helpful. This finding was further corroborated by 66% of the students who rated the review sessions as helpful or very helpful.

Table 1

Comparison of At-Risk Reading Groups with Reading Review Session Use

Group	Did Not Use Reading Review n	%	Used Reading Review n	%
Passed	4	29	4	44
Failed	10	71	5	56
Total	14	100	9	100

Note. n=23.

Mathematics Review Sessions

Of the 76 students at-risk in mathematics, 29 students (38%) enrolled in the mathematics review sessions and 47 students (62%) did not. As seen in Table 2, more students who did not attend the mathematics review sessions passed the mathematics CLAST subtest than those who attended the mathematics review sessions. This indicated that the mathematics review was ineffective in passing the CLAST. It is suggested that the mathematics skills of the at-risk students were so deficient that mathematics review sessions were not sufficient to increase their mathematical knowledge to a passing level.

If one assumes that the students who sat for the mathematics subtest and attended the mathematics review sessions were equally prepared as the students who sat for

the mathematics subtest and did not attend the mathematics review sessions, this would indicate that the mathematics review sessions were ineffective in helping students pass the CLAST mathematics subtest. However, 93% of the students rated the review sessions as helpful.

Table 2

Comparison of At-Risk Mathematics Groups with Mathematics Review Session Use

Group	Did Not Use Math Review n	%	Used Math Review n	%
Passed	24	51	13	45
Failed	23	49	16	55
Total	47	100	29	100

Note. n=76.

English Language Skills (ELS) Review Sessions

Of the 70 students at-risk in English, 12 students (17%) enrolled in the ELS review sessions and 58 students (83%) did not. It can be seen from Table 3 that passing rates on the ELS subtest were considerably higher for the students who participated in the review session. The pass rate of students who participated in review utilization was 75% compared to the pass rate of 64% of the students who did not participate.

It was strongly suggested from these results that ELS review sessions were helpful. These findings were further corroborated by 92% of the students who rated the review sessions as helpful.

Table 3

Comparison of At-Risk ELS Groups with ELS Review Session Use

Group	Did Not Use ELS Review n	%	Used ELS Review n	%
Passed	37	64	9	75
Failed	21	36	3	25
Total	58	100	12	100

Note. n=70.

Essay Review Sessions

Of the 70 students at-risk in English, 12 students (17%) enrolled in the essay review sessions and 58 students (83%) did not. As shown in Table 4, 72% of the students who did not participate in the essay subtest review sessions passed the essay subtest without taking the review. This compared to 50% of the students who participated and passed.

Only 12 students enrolled in the essay review sessions and 50% failed. If one assumes that the students who attended the review sessions and the students who did not attend the review sessions were equivalent in essay writing skills, this result would indicate that the essay review

sessions were not helpful. On the other hand, the students' perceptions of review helpfulness were inconsistent with this implication. Specifically, 92% of the students rated the review sessions as helpful. This might indicate that students perceived that the review sessions resulted in improved scores, although the actual scores were below the pass level.

Table 4

Comparison of At-Risk Essay Groups with Essay Review Session Use

Group	Did Not Use Essay Review n	%	Used Essay Review n	%
Passed	42	72	6	50
Failed	16	28	6	50
Total	58	100	12	100

Note. n=70.

Research Question 2: How Helpful Did the Students Perceive Self-Study for Passing the CLAST?

On the questionnaire the students were to indicate their use of self-study and to rate the helpfulness of the self-study in preparation for the CLAST according to the following scale: very helpful (4), helpful (3), somewhat helpful (2), not helpful (1), or did not use (0). Self-study included taking sample CLAST tests; studying with a friend, teacher (but not the CLAST review teacher), tutor, and/or a CLAST

review teacher but not in a formal review session; studying alone; studying in the library; studying in the learning support/alternate instruction center; using a CLAST review book; and/or other methods (student to fill in). It was the intent to compare use of self-study to passing CLAST subtest scores of at-risk students. The purpose was to determine the helpfulness of self-study for at-risk students in passing the CLAST subtests.

Reading Self-Study

Of the 23 students at-risk in reading, 10 students (43%) engaged in self-study while 13 students (57%) did not use self-study. Of the students who passed, 40% used self-study while 31% did not use self-study. It is suggested from the data shown in Table 5 that more students would have passed the reading subtest if they had engaged in self-study.

Table 5

Comparison of At-Risk Reading Groups with Reading Self-Study Use

Group	Did Not Use Reading Self-Study n	%	Used Reading Self-Study n	%
Passed	4	31	4	40
Failed	9	69	6	60
Total	13	100	10	100

Note. n=23.

It is suggested from the data that utilizing reading self-study was helpful. This finding was further corroborated by 80% of the students rating self-study as helpful.

Mathematics Self-Study

Of the 76 students who were at-risk for mathematics, 50 students (66%) used self-study and 26 students (34%) did not use self-study. As shown in Table 6, 58% of the students who used self-study passed the mathematics subtest, while only 31% of the students who did not use self-study passed the mathematics subtest.

Table 6

Comparison of At-Risk Mathematics Groups with Mathematics Self-Study Use

Group	Did Not Use Math Self-Study n	%	Used Math Self-Study n	%
Passed	8	31	29	58
Failed	18	69	21	42
Total	26	100	50	100

Note. n=76.

It is strongly suggested from the data that self-study in mathematics was helpful. This finding was further corroborated as 49 out of 50 (98%) of the students believed their self-study to be helpful. Of the 21 students who

failed, only one student did not rate self-study as helpful. All of the students who passed the mathematics subtest found self-study to be helpful.

English Language Skills Self-Study

Of the 70 students at-risk in English, 37 students (53%) used self-study while 33 students (47%) did not. As shown in Table 7, students who used self-study had an 81% pass rate while students who did not had a 48% pass rate.

Table 7

Comparison of At-Risk English Language Skills (ELS) Groups with ELS Self-Study Use

Group	Did Not Use ELS Self-Study		Used ELS Self-Study	
	n	%	n	%
Passed	16	48	30	81
Failed	17	52	7	19
Total	33	100	37	100

Note. n=70.

It is suggested from these data that self-study in English language skills was helpful to students in passing the ELS subtest. This finding was further corroborated by 97% of the students who rated their self-study as helpful. Six students rated their self-study as helpful but failed the ELS subtest. Possibly, these students had unrealistic perceptions of their English language skills, which might

have led to their believing that their studying was more helpful than the test results showed.

Essay Self-Study

It can be seen from Table 8 that out of 70 students at-risk for the essay subtest, 37 (53%) utilized self-study while 33 (47%) did not. Students who used self-study had a slightly higher pass rate (70%) than students who did not use self-study (67%).

Table 8

Comparison of At-Risk Essay Groups with Essay Self-Study Use

Group	Did Not Use Essay Self-Study n	%	Used Essay Self-Study n	%
Passed	22	67	26	70
Failed	11	33	11	30
Total	33	100	37	100

Note. n=70.

Self-study for the essay subtest was helpful for students to pass the essay subtest. This finding was further corroborated by 97% of the students who rated their self-study as helpful. All students who passed the essay subtest using self-study perceived their study as helpful. Of the 11 students who failed, 10 students reported their self-study was helpful. It is possible that the students who failed had

an unrealistic perception of their writing skills and believed that their studying was more helpful than test results showed.

Research Question 3: How Helpful Was Completing CLAST-Related Courses for Passing the Related CLAST Subtests?

The helpfulness of CLAST-related courses on CLAST performance was addressed by comparing use of preparatory and CLAST-related academic courses to pass/fail CLAST scores. Students diagnosed as at-risk were required to complete preparatory courses before enrolling in academic courses. However, once enrolled in a preparatory course, students could be exempted from that course based on in-class diagnostic tests. Therefore, some students who were diagnosed as at-risk due to placement test scores were able to enroll in academic courses without taking preparatory courses.

In each subject area, one or two preparatory courses and one or more academic courses were offered. These courses at the selected community college were offered through the academic departments.

For reading, the preparatory courses were REA 0001, Basic Reading I, and REA 0002, Basic Reading II. The academic course was REA 1105, College Reading Techniques.

For mathematics, the preparatory courses were MAT 0002, Developmental Mathematics, and MAT 0024, Elementary Algebra. The academic courses were MGF 1113, Topics in College

Mathematics I, and MGF 1114, Topics in College Mathematics II. In addition to the previously mentioned courses, the mathematics department offered additional courses which could supplement the above courses.

The preparatory English courses were ENC 0002, Basic Writing I, and ENC 0010, Basic Writing II. The academic courses were ENC 1101, Composition I, and ENC 1102, Composition II. Courses which could be substituted for ENC 1101 and ENC 1102 were ENC 2151, Communications I, and ENC 1152, Communications II. In addition to the previously mentioned courses, the English department offered additional courses which could supplement these English courses.

Reading Courses

Any combination of reading courses was not considered a helpful strategy to pass the reading subtest of the CLAST. Completing the preparatory and academic reading courses were helpful for 26% of the at-risk students in passing the CLAST; however, 43% of the at-risk reading students who completed both the preparatory and academic reading courses failed.

All at-risk reading students sat for the CLAST reading subtest after completing at least one reading course. This might indicate that these students realized their reading skills were weak and tried to improve them before sitting for the CLAST. In addition, these findings seem to indicate that even if at-risk students completed the required reading

course(s), some students were still deficient in reading skills and additional remediation was necessary.

For the at-risk students who passed, the reading courses might have remediated deficient reading skills. For the at-risk students who failed, it should be noted that passing a preparatory course was insufficient for passing the CLAST. The preparatory and academic courses might have improved the students' reading levels but not enough to compensate for their reading deficiency. As shown in Table 9, 65% of the reading students had very weak reading skills, and preparatory and academic coursework was not enough to help them pass. However, too few students were enrolled in the reading courses to draw reliable conclusions.

Table 9

Comparison of At-Risk Reading Groups with Reading Courses Completed

Group	Preparatory Courses		Academic Courses		Prep & Acad. Courses		No Courses	
	n	%	n	%	n	%	n	%
Passed	2	40	0	0	6	35	0	0
Failed	3	60	1	100	11	65	0	0
Total	5	100	1	100	17	100	0	0

Note. n=23.

Mathematics Courses

As indicated in Table 10, students who completed only academic courses had the highest pass rate (56%). Academic coursework alone was helpful for these students; it was the only strategy helpful in passing the CLAST. However, it is possible that these students either were misdiagnosed as being at-risk or were able to improve their mathematics skills to a passing level.

Table 10

Comparison of At-Risk Mathematics Groups with Mathematics Courses Completed

Group	Preparatory Courses		Academic Courses		Prep & Acad. Courses		No Courses	
	n	%	n	%	n	%	n	%
Passed	0	0	5	56	30	48	2	100
Failed	2	100	4	44	33	52	0	0
Total	2	100	9	100	63	100	2	100

Note. n=76.

From the data in Table 10, it can be seen that preparatory courses alone were not sufficient for students to pass the mathematics subtest. Of the 83% of the at-risk mathematics students who sat for the mathematics subtest after completing preparatory and academic mathematics courses, 48% passed. However, some courses did not include all of the CLAST mathematical competencies. As at-risk

mathematics students did not have strong mathematics foundations, completing only the required mathematics courses might not have been sufficient to compensate for a weak mathematical background; additional mathematics courses might be necessary for at-risk students to gain competency in all mathematical CLAST skills.

English Language Skills Courses

As seen from the data in Table 11, no student only relied on completing the preparatory courses. Of the 46 students who passed, only one student passed without completing any courses.

Table 11

Comparison of At-Risk ELS Groups with English Courses Completed

Group	Preparatory Courses n	%	Academic Courses n	%	Prep & Acad. Courses n	%	No Courses n	%
Passed	0	0	22	88	23	52	1	100
Failed	0	0	3	12	21	48	0	0
Total	0	0	25	100	44	100	1	100

Note. n=70.

An almost equal division existed between students completing only academic courses (n=22) and preparatory and academic courses (n=23) before sitting for the CLAST. Academic courses only or combined with preparatory courses

were helpful. The students who enrolled in only academic courses had the highest rate (88%) for passing the ELS subtest.

Out of the 46 students who passed the ELS subtest, 22 students (48%) did not complete preparatory courses before enrolling in academic courses and passed, while one student did not enroll in any CLAST-related courses and passed. It is possible that these students either were initially misdiagnosed as at-risk or were able to improve their ELS skills to a passing level.

Essay Courses

As indicated in Table 12, no students solely relied on completing preparatory courses before sitting for the CLAST. Comparing the students who passed, 76% completed only academic courses and 64% completed preparatory and academic courses, indicating helpfulness of these methods.

Table 12

Comparison of At-Risk Essay Groups with English Courses Completed

Group	Preparatory Courses		Academic Courses		Prep & Acad. Courses		No Courses	
	n	%	n	%	n	%	n	%
Passed	0	0	19	76	28	64	1	100
Failed	0	0	6	24	16	36	0	0
Total	0	0	25	100	44	100	1	100

Note. n=70.

As indicated from the data, either academic courses alone or combined with preparatory courses were helpful. As 76% of the students who completed only academic courses passed the essay subtest, it is possible they either were initially misdiagnosed as being at-risk or were able to improve their essay skills to a passing level.

Telephone Interviews

Interviews were conducted to obtain additional insights pertaining to preparation strategies, student performances, and preparations for future study. Another focus of the interview was to compare the students' perceptions of performance to actual performance in order to determine if students felt their CLAST preparation strategies were helpful.

Of the 115 students who participated in the study, 59 (51%) were chosen to be interviewed. The interviewer was able to contact 39 students (66%). Each student was designated by a letter, A-MM. The students were interviewed using a set of eight questions. The questions and responses follow.

1. Did you take any college preparatory courses at the selected community college and were they helpful?

Most students were glad they took preparatory courses, but some expressed concerns because they were not granted graduation credit and it would take them longer to graduate. Almost all of the students (n=34, 87%) took at least one

preparatory class. The students were satisfied with these courses.

The preparatory mathematics courses were self-paced and while most students felt this was a disservice, others liked it. Students were given assignments to complete on their own. Most students preferred lectures and more involvement with the teachers. Student G (male) stated, "If I wanted to study on my own, I could have just bought the book and not paid tuition." Some students said they had to repeat the course, as they didn't finish the self-paced textbook on time and they still had problems although they went to the learning support center for extra help from the mathematics tutors. Student DD (male) said, "Thank goodness for the LSC tutors. The math tutor was able to explain some concepts better than the instructor. I need a lot more help than I get in class."

The reading preparatory classes also received positive and negative comments. Student W (female) felt REA 0002 was "not helpful and the class size should have been smaller to allow a one-on-one situation." Student L felt the reading preparatory classes helped her "get up to speed"; another woman found it "helpful."

Students who took the English preparatory classes found them "okay" to "good." Student JJ commented that the teachers "were helpful" and although he still didn't like to write, he could "do it a little better."

Many students wished the preparatory classes had fewer students enrolled so they could receive more individual attention. Student O (male) commented that the teacher spent "too much time explaining things to a few students who didn't understand. Smaller class size would allow a teacher to help each person, instead of taking up class time." Three students also mentioned a course entitled "College Survival Skills" as helpful in becoming "a more effective student."

2. What factors, such as your high school preparation, college preparation, CLAST preparation strategies, etc., contributed most to your CLAST scores?

Most students (n=22) interviewed felt their high school education plus college courses and study habits contributed to their CLAST performance. Some students (n=7) believed that their high school education was very general and they didn't learn many CLAST skills. The remaining students felt they still weren't prepared for the CLAST and failed one or more subtests.

One student felt he could have passed the CLAST after his high school graduation and five students could not decide what factors specifically contributed to their scores; other students felt their performance was due to a combination of factors. Three students believed their high school preparation was very good. Student C stated she felt "pretty prepared when entering college." Student J (female) claimed "high school didn't help." Student S said she took math in high school but because she was not a recent high school

graduate she "took math because of the placement test" and the preparatory course "reviewed what I knew but forgot." Student F felt being "an avid reader" helped her because she had "a good background." Other students cited College Reading Techniques, Intermediate Algebra, and Composition I as helpful. Student GG (female) felt the Cliff Notes CLAST review book greatly helped. Student S stated she was out of school for 20 years and "found all the classes very helpful." Eight students said their jobs cut into their study time.

3. In retrospect, what would you have done differently in preparation for the CLAST? What would you add? What would you omit?

All students who didn't study and failed said that they would study for the retests and that they should have studied initially. In retrospect, these students would have prepared for the CLAST by studying. Ten students said they would have sat for the CLAST shortly after completing the academic classes, while the information was fresh in their minds. Other comments were "study more and definitely study more math"; "study longer"; "nothing"; and "Use Cliff Notes. Take more practice tests."

Student Q felt she "should have taken a math class each semester instead of skipping a semester. Maybe have math two or three times a week or maybe audit a class." Student FF (male) felt the key to passing the essay subtest was to "write more."

All students said for their retests they took review sessions in the areas they failed. By the time of the interviews, these students had already sat for the CLAST two and sometimes three times; they all used one or more preparation strategies. Student H (female) found the English review provided "strategies that were helpful. I also liked the helpful hints the instructor pointed out."

Student HH (male) had a learning disability and found that working with a private tutor helped with the retests. Student P felt Cliff Notes helped her on the retest. All the students said that they would have studied more the first time if they had realized what was on the test and how difficult parts of it were.

4. Did other factors, such as time spent, test anxiety, test conditions, etc., affect your CLAST performance?

Most students ascribed additional factors to poor test performance. They felt the test was too early in the morning. Additional comments included the following. "I don't like taking tests that early." "I'm used to sleeping in and I had to get up way too early." "I have to take public transportation to school and the schedules were not good to take this test so early so I had to find someone to drive me and I was worried I would be late."

Test anxiety was another factor that 18 students said influenced their performance. Typical comments included the following. "There was too much testing in one day. I lost concentration at the end." "There was not enough time in

between the tests, especially the English. I didn't have enough time to plan before writing." "I had essay anxiety. In classes we had more time to prepare. Maybe we could get the essay questions in advance?" "I was scared the first time but I did much better the second time because I knew what to expect."

Student M said she was confident the first time she took the CLAST but nervous on the retest because she now knew what to expect. Student F said he felt "sleepy when in a classroom and this was no exception" and that his "lack of attention span" didn't help. Student H believed she "would have felt unnerved and unsure if I hadn't prepared. I utilized the reviews and the teachers' handouts so I felt good going into the test and passed everything."

Students also had other concerns they felt affected their performance. Four students (10%) cited personal problems. Student EE (female) had to go out of town on business that week and "came back in the morning so I was up all night and of course I failed the whole thing because I was so tired. I didn't have time to sleep, let alone study."

Three students (8%) commented specifically on the length of the test. They felt that the CLAST should be given over two days or in intervals. Six students (15%) wanted to know why they couldn't just take one part of the CLAST after a course completion, rather than having to take everything at once, sometimes a year after a course completion.

5. How much time did you spend studying for the CLAST? What did you do the night before the CLAST?

Many students had trouble remembering what they did the night before the CLAST, but they thought they probably went to sleep early; some thought they might have reviewed some of the material.

Most students said they did not study and wished they had. Out of 39 students, only 16 students (41%) said they studied, either using the review sessions, self-study, or both; most students claimed they spent no time studying. Student S, who had been out of high school for 20 years, said she studied "outside of classes, maybe three days, several evenings, and maybe two weekends doing practice tests." Student Z said she studied "a lot. I wouldn't have done as well if I didn't study. I studied math the most." Student J said she thought she studied "one to two weeks."

The students said they did not realize how difficult the test would be; if they had known, they would have prepared differently. They would have studied more. The night before the retest many said they studied and went to sleep early.

6. If you had to prepare for the CLAST for the first time or if you took a subtest for the second time, knowing what you now about the CLAST, what would you do differently?

Most students believed that if they were taking the CLAST for the first time now, they would definitely prepare for it. Eleven students said they would not do anything differently; nine of these students studied prior to taking

the CLAST for the first time. Most students who failed said they would take the review sessions before taking the CLAST and planned to use them prior to the retest. Other students felt they would either study on their own or enroll in the review sessions and also would self-study. Some students said they would be sure they took the CLAST-designated academic courses. Student M stated she would "study. Go back to basics and then go from there." Student KK felt she would have "kept the math books and reviewed. The second time I took CLAST I took the math review and passed." One man said he would devote "about five hours of intensive studying of notes and practice exams." Student HH hired a learning disability tutor who "helped so much the second time. I was able to understand what I missed in the classes and reviews."

7. What advice would you give future first-time CLAST takers?

The students were fairly consistent with their answers. Thirty of the students (77%) specifically referred students to review sessions, courses, review books and materials (self-study), or some combination of strategies. The students interviewed all felt that first-time CLAST takers should enroll in the review sessions, study on their own, and take the required courses, even though these students did not initially follow their own advice. Student B, who failed all four subtests, summed up the prevailing opinion of most students when he said he would "get a lot of rest the week

before, study, and take the review." Some students wished they had known more about the CLAST before they took it. Student N said he didn't know the college offered review sessions and found out by accident because a friend was taking one. Student F (male) offered, "Take the review classes first. You don't really know what to expect on the essay." Student K (male) suggested, "Learn how to use time wisely. Take College Survival Skills first. This college is not like high school, although people think it is." Student J felt it was necessary "to study and to get the basics."

Student BB (female) said, "Take the preparatory classes. Get a teacher involved because it makes studying more fun. Take the college courses." Student V (female) had a three-part answer; she said, "Don't wait for the last semester to take CLAST. Take it [CLAST] after the prep classes. Take the reviews." Student S was "surprised and stunned how many students didn't prepare. I would definitely require the reviews." Student Z said, "Don't take the test lightly. A lot of material is covered in one day. Go to the reviews if you are having a hard time with a subject." Student CC (male) said, "If I had taken statistics I would have done better, so take that course." Nineteen students (49%) felt that using a review book was helpful; four students specifically mentioned the Cliff Notes CLAST review book. Student F felt students should "try to relax and to get through the test quickly. After all, if you fail you can take it again and get more time." Student BB stated, "Bring

some lifesavers or something. My throat was so dry because I was nervous."

8. Additional comments.

The following comments were representative of answers not used in the above questions. The students addressed issues which personally related their perceptions of the CLAST experience.

"The test doesn't measure some knowledge. I have slight dyslexia and am a bad speller. The essay part was tough for me. Also, this test has no place in the real world. We can't use computers and that wasn't fair. As I am older than most of the students and have my own business, I was very discouraged and don't plan to return. I really don't need the degree. I just wanted it."

"Shorter reading selections would be nice."

"I'm an avid reader so I had no problems. I would advise everyone to be sure their reading speed was good."

"The reviews were geared for day students. Have them at different times, maybe at night. I couldn't attend because I had to work."

"Take CLAST as soon as possible after you finish your classes. I mean ASAP, don't wait, you might forget something."

Summary of Findings

The helpfulness of preparation strategies that had an impact on CLAST performance was addressed in Question 1 and

Question 2 in the form of a questionnaire sent to students and in Question 3 from information obtained from student IPERs. The questionnaire included determining CLAST review sessions and self-study use and the perception of the helpfulness of the review sessions and the self-study.

The intent of this study was to compare use of CLAST review sessions, self-study, and coursework to success in passing CLAST subtests. To determine the helpfulness of the test preparation strategies, the criteria established was that more students passed and used the preparation strategy than students who passed and did not use the strategy. To examine the helpfulness of the preparation strategies and the students' perceptions of helpfulness, each CLAST subtest area was examined. The at-risk groups were divided into pass/fail groups and subdivided into use/nonuse of the preparation strategies in each CLAST subtest area.

Interviews were conducted to gain additional insights of students' preparation strategies, attitudes, and perceptions, in addition to insights into past performance and future test preparation strategies. These interviews also served as a basis to compare the students' perceptions of performance to actual performance to determine if the students felt their preparation strategy was helpful.

Findings Related to Question 1

With this CLAST administration, participation in the English language skills review and in the reading review was

associated with success on the corresponding CLAST subtests. This was supported by responses to the questionnaire and telephone survey. Participation in the mathematics and the essay review sessions was not associated with passing the corresponding CLAST subtests. However, most students rated each of the review sessions as helpful.

Of the 115 at-risk students in this study, only 30% used the review sessions. Approximately one-half of the students who passed the CLAST subtests enrolled in the review sessions. It can be seen from the data that the review sessions were underutilized. However, students perceptions were that review sessions were helpful. Even if students failed the subtests, many reported that the review sessions were helpful.

Findings Related to Question 2

With this CLAST administration, the reading, mathematics, English language skills, and essay self-studies were helpful for at-risk students. Each subject area self-study had a higher pass/used rate than pass/nonuse rate and a lower fail/used rate than fail/nonuse rate.

Of the 115 at-risk students in this study, more than half of the students used self-study and rated their self-study helpful. Only 2 out of 89 students rated their self-study as not helpful. Of the 45 students who failed, only 3 believed self-study was not helpful. Most students believed self-study was helpful.

Findings Related to Question 3

Some students were able to pass the CLAST using a combination of coursework, although the helpfulness of courses completed by at-risk students varied by subject area. While some at-risk reading students passed the reading subtest, for the majority of reading students, completing preparatory and/or academic coursework was not helpful. Completing only academic coursework was helpful for mathematics students. For both the English language skills and essay subtests, it was helpful to complete only academic courses or complete a combination of preparatory and academic courses.

Findings Related to the Interviews

Students who passed the CLAST subtests were satisfied with their CLAST preparation. However, students who failed believed they were not adequately prepared. These students reported they did not know enough of the subject material, did not know what to expect on the test, and found the CLAST harder than expected. These students stated that they would study for the retests by enrolling in CLAST-designated academic courses in the failed area (if they had not already completed them), sit for the CLAST closer to the completion of the academic courses, enroll in the review sessions, study more on their own, or use some combination of methods. The

students in this study recommended that students who will sit for the CLAST for the first time or for a retest take advantage of all preparation strategies and CLAST materials available.

CHAPTER 5
SUMMARY, CONCLUSIONS, SUGGESTIONS, AND RECOMMENDATIONS

Summary

This research began with a discussion regarding the dilemma facing Florida community colleges and the at-risk students attending these colleges. The colleges provided various strategies, services, and learning opportunities for at-risk students to improve their reading, mathematics, and English CLAST skills. After these extensive efforts, as well as sometimes completing all degree requirements, some students still fail the CLAST. This result causes great concern among administrators in regard to the abilities of incoming students as measured by the placement examination, the accuracy of the placement exam, the remediation of skills in preparatory and academic courses, and the students' acquisition of skills necessary to pass the CLAST.

It was the purpose of this research to determine the helpfulness of the preparation strategies offered by the selected community college for at-risk students to pass the CLAST. This problem was explored by examining the strategies students perceived to be helpful and used to prepare for the CLAST: college-sponsored review sessions in the CLAST subject areas; self-study using college and personal resources; and preparatory and academic course completion.

Questionnaire responses, placement test scores, initial CLAST scores, college IPERs, and telephone interview answers were examined.

Students were identified as at-risk in CLAST subtest areas based on the college entrance placement examination scores. A student could be at-risk for one or more subtests. The students' performances on the CLAST were then examined in terms of use of review sessions, self-study, and preparatory and academic course completion.

This research was done in an effort to determine any relationship between performance on the CLAST and preparation strategies offered by the selected community college. There has been little research done which examined the helpfulness of preparation strategies as evidenced by CLAST pass scores. The results of this study will enable the selected community college administrators and other college personnel to devise more effective courses, programs, and preparation strategies.

This study provides insights for students who will sit for the CLAST for the first time by identifying preparation strategies that have contributed to other at-risk students achieving passing scores. The results of this research have implications for at-risk students at the selected community college and possibly for other at-risk college students in the state of Florida as well as increasing the knowledge base regarding the CLAST preparation strategies.

Conclusions

For at-risk students, the helpfulness of the preparation strategies varied with each strategy and with each subtest. Even using preparation strategies, a greater percentage of at-risk students failed the reading and the mathematics subtests than the ELS and essay subtests.

Research Question 1 was concerned with determining the helpfulness of college-sponsored CLAST review sessions for passing the CLAST. The helpfulness of the review sessions varied, as evidenced by the demonstrated pass rate. The reading and ELS review sessions were helpful for passing the reading and ELS subtests; the mathematics and essay review sessions were not helpful for passing the mathematics and essay subtests.

Most students perceived the review sessions as helpful in each subtest area. Interviews revealed that students who did not use the review sessions and failed, perceived them to be useful and either planned to utilize them when studying for the CLAST retest or had already used them for the retest. Students who attended the review sessions recommended them. Most students who attended the review sessions viewed them as miniclasses and tried to learn missing and deficient skills.

Research Question 2 was concerned with determining the helpfulness of self-study for passing the CLAST. Self-study in each subtest area was helpful, as evidenced by the number of students who used this strategy and passed.

Most students perceived their self-study as helpful. This seems to indicate that some students who used self-study might not have had an accurate perception of subject area knowledge and/or effectiveness of their study habits. Interviews revealed that students who did not use self-study and failed, perceived self-study to be helpful and stated they did or would definitely prepare more for the CLAST retest. This finding suggests that some students still did not know the value of studying or did not acquire good study habits. At-risk students seemed to utilize self-study to review as well as to gain additional knowledge and improve weak skills.

Research Question 3 was concerned with determining the helpfulness of preparatory and academic coursework for passing the CLAST. Two preparatory courses and one or more academic courses were offered in each subtest area. For the reading subtest, no coursework combination was helpful. For mathematics, only academic coursework proved helpful. For the ELS and essay subtests, only academic coursework and a combination of preparatory and academic coursework proved helpful.

Course completion did not insure passing the CLAST for at-risk students. After successfully completing preparatory and CLAST-related academic courses, students' skills levels were considered at the college level and students should have been able to pass the CLAST; however, 45% of the at-risk students still failed the subtest for which they were

initially diagnosed as at-risk. Perhaps their study skills, such as test taking, studying, and retention of material, affected their performances. This might have been the case, especially if students relied solely on course knowledge, did not take the CLAST upon completion of subject area coursework, and did not use additional test preparation strategies.

Students stated in the interviews that they would have preferred sitting for a CLAST subtest after the completion of the CLAST-designated academic course. They would also have preferred a later starting time and testing over a two-day period. Additionally, they believed taking additional coursework, especially in mathematics, would have been helpful since all CLAST competencies were not taught in the preparatory and academic courses. They stated that more information concerning the CLAST would have been helpful and reported they did not prepare enough before taking the CLAST.

Suggestions and Recommendations

As incoming skills levels seemed to be a predictive factor in passing the CLAST, many students appeared inadequately prepared upon entering the selected community college. Some students did not greatly improve their skills although they completed preparatory and academic courses. Perhaps by the time students attend college, it could be difficult and even unrealistic for some students to remediate a possible lifetime deficiency in 16-32 weeks.

It is therefore necessary to identify at-risk students before they enter college. Greater articulation needs to occur between the area public schools and the selected college. Public school teachers need to prepare their students by identifying and stressing CLAST competencies in their classes. It is suggested that the selected community college involve its subject area instructors in in-service training for public school subject area teachers.

The administrators at the selected community college might wish to examine the entrance examinations to assure that the competencies being tested are valid and course placement is accurate. They might also examine the curriculum of the preparatory courses, as stricter and higher standards may be needed before allowing students to enter academic courses.

Concerning the CLAST review sessions, many students who failed their initial CLAST attempt believed the review sessions were helpful and attended them before attempting the retest. Excuses students gave for not initially using the review sessions ranged from inconvenient times to not being aware the review sessions existed.

It is recommended that a large-scale qualitative and quantitative study be undertaken to determine the efficacy of the review sessions. Should the use of review sessions prove significant, the selected community college might wish to add more review sessions and more extensively advertise review session availability to the college community. In addition

to advertising times and locations, the advertising should stress that review sessions are free. Additionally, subject area instructors should be notified when and where the review sessions are scheduled and announce them in class.

It is suggested that the college restructure the organization and presentation of the review sessions. The students who took the review sessions, especially the retesters, found the content to be helpful. However, there were many complaints, the most common being times offered. At present, full-time faculty teach the CLAST review sessions, usually in the late afternoon or evenings, conforming to the instructors' schedules and after all full-time contracted courses are taught. An alternative is to hire one or more full-time CLAST instructors. The CLAST instructor would then be more accessible to students. Review sessions could be scheduled throughout the day and evenings and possibly weekends. Students could schedule individual time with the CLAST instructor, and, if necessary, the instructor also could hold review sessions more frequently. Also, having the availability of full-time personnel might enable the students to seek help sooner. Finally, students might be more willing to contact a CLAST instructor than a full-time academic course instructor.

Concerning self-study, students need to be aware of what is being tested on the CLAST. It is recommended that a large-scale qualitative and quantitative study be undertaken to determine the efficacy of self-study. Should the use of

self-study prove significant, the selected community college might wish to further advertise self-study material availability to the college community.

In order to facilitate the students' own preparation strategies, the college might devise up-to-date student handbooks to distribute to students when they register for the CLAST. This handbook might list CLAST competencies for each subject area, courses that stress these competencies, instructors who teach these courses, help available on campus, office locations and office telephone numbers of contact personnel for CLAST review sessions, test-taking strategies, and a bibliography of CLAST review materials to help students study independently.

Students felt self-study was valuable, and those students who did not initially study planned to study for the retest. However, some students felt they wasted their time studying because what they studied was not on the test. Students need to be aware of the CLAST competencies. It is suggested that the college further incorporate CLAST competencies into the curriculum in related subject areas and have academic instructors identify the CLAST competencies as they relate to their courses.

Concerning the issue of courses, an examination of content and exit criteria should be addressed further. Additionally, an examination of placement procedures and course content would be helpful. It is recommended that

further quantitative and qualitative study is needed in this area.

A closer examination of the individual courses taken by at-risk students, along with required course content, might help determine why these students did not perform at a passing level. Some of the CLAST-designated courses did not have all CLAST competencies included in the curriculums.

Topics in College Math I and II and Composition I and II are either required or have alternative required courses; however, there is no required reading course if College Reading Techniques is not required. It is, therefore, suggested that College Reading Techniques be required of all students, regardless of placement score. Since Florida requires a CLAST subtest in reading, the selected community college should require all students to take a reading course; CLAST reading competencies are not specifically taught in any other course.

While support was found for the helpfulness of some review sessions, self-study, and coursework for this CLAST administration, this does not preclude the possibility that with a larger sample or with a different CLAST administration, the results might have been different. Hence, it is recommended that the qualitative part of this study be expanded and a more extensive quantitative component be added and administered during at least two to three successive CLAST administrations.

While this study detailed one group of at-risk students, it cannot be conclusively said that the results would be the same for other at-risk students at the selected community college or for other at-risk students attending community colleges throughout the state. Therefore, it is recommended that similar qualitative and quantitative studies be conducted at the selected community college for a period longer than one CLAST administration. It is further recommended that similar qualitative and quantitative studies be conducted at other community colleges to further profile at-risk students throughout the state.

APPENDIX A
CLAST REGISTRATION LETTER

Dear Student:

Our records indicate that you have registered for the CLAST in the subject areas indicated below. You must have completed **18 college level credit hours** (excluding college preparatory) to take this test. If you have any questions about this criteria, please call Testing on the campus where you registered.

Listed below are e**ssential guidelines** to follow on the day of the examination.

1. Bring this letter with two forms of identification (one photo I.D.).
   Arrive on time!

2. If your social security number above is incorrect, bring your social security card.

3. Bring two ball point pens (black or blue).

4. Because of varying room temperatures, you may want to bring a sweater.

Report To:
Building:
Time:
Date:

Following are the areas in which you are registered:

Complete Battery:
Essay Retake:
ELS Retake:
Reading Retake:
Math Retake:

NOTE: ***IF YOU ARE REGISTERED FOR THREE OR FOUR RETAKES, IT MAY BE NECESSARY TO FINISH YOUR TESTING ON THE MAKE-UP DATE THE FOLLOWING WEEK. CALL TESTING IF YOU HAVE ANY QUESTIONS.***

Thank you and we wish you success.

Institutional Test Administrator

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APPENDIX B
CLAST REGISTRATION COVER
LETTER

Dear Student,

I am a doctoral student in Educational Leadership working on a dissertation under the direction of Dr. John Nickens and Dr. Linda Behar at the University of Florida.

The topic I will be investigating involves examining what test preparation resources students use to prepare for the CLAST and the effectiveness of the resources.

The first part of the survey lists possible CLAST preparation methods. Please rate the helpfulness of each method using the following scale: (4) very helpful; (3) helpful; (2) somewhat helpful; (1) not helpful; (0) did not use. The remainder of the survey asks you to provide demographic information.

Your assistance in this phase of the research will be greatly appreciated. The survey should take about five minutes to complete. Please bring the completed survey to your test site on February 20th. No one at SPJC or elsewhere will have access to your replies. SPJC student numbers and social security numbers are requested solely to assist in follow-up so that as many responses as possible will be received.

Thank you in advance for your participation and good luck on the CLAST.

Sincerely,

Sharon A. Swallwood

APPENDIX C
CLAST SURVEY

Please respond to each item (1-9) listed below and bring completed survey to CLAST test site on February 20.

1. RATE how helpful each method listed below was in helping you prepare for CLAST using the scale to the right of each method. Please circle your response for each method.

	Very Helpful	Helpful	Somewhat Helpful	Not Helpful	Did not Use
A. SPJC CLAST Reading review.	4	3	2	1	0
B. SPJC CLAST English language skills review.	4	3	2	1	0
C. SPJC CLAST Mathematics review.	4	3	2	1	0
D. Sample Reading CLAST test(s).	4	3	2	1	0
E. Sample English language skills CLAST test(s).	4	3	2	1	0
F. Sample Essay CLAST test(s).	4	3	2	1	0
G. Sample Mathematics CLAST test(s).	4	3	2	1	0
H. Studied with a friend.	4	3	2	1	0
I. Studied with a teacher (not review teacher).	4	3	2	1	0
J. Studied with a tutor.	4	3	2	1	0
K. Studied with a CLAST review teacher(outside class)	4	3	2	1	0
L. Studied alone.	4	3	2	1	0
M. Studied CLAST material in library.	4	3	2	1	0
N. Studied CLAST material in Learning Support Center (Clearwater or Tarpon Springs).	4	3	2	1	0
O. Studied CLAST material in Alternate Instruction Center (St. Pete).	4	3	2	1	0
Q. Used a CLAST review book.	4	3	2	1	0
R. Other. _____	4	3	2	1	0

2. Please write in: SPJC Student Number _____ Social Security Number (SSN)_____

For items 3-9, please check the appropriate reply.

3. Is February 1993 your first time taking CLAST? _____ YES _____ NO
4. Did you study or review for the Reading section of CLAST? _____ YES _____ NO
5. Did you study or review for the English language skills section of CLAST? _____ YES _____ NO
6. Did you study or review for the Essay section of CLAST? _____ YES _____ NO
7. Did you study or review for the Mathematics section of CLAST? _____ YES _____ NO

8. _____ Female _____ Male

9. _____ Asian _____ Black (Afro-American) _____ Hispanic _____ White _____ Other (_____)

10. Any additional comments or ideas concerning your experiences with or preparation for any section of the CLAST?_____

Thank you for your participation.

APPENDIX D
CLAST ROOM SUPERVISOR INSTRUCTIONS

Dear Colleague,

I am currently an Ed.D. candidate in the College of Education, Department of Educational Leadership, at the University of Florida under the direction of Dr. John Nickens and Dr. Linda Behar. This survey is a part of my doctoral dissertation and is designed to obtain information from students regarding what test preparation resources, if any, they used to prepare for the CLAST and the effectiveness of their preparation strategies.

The students were requested to complete this survey and return it to the test site. However, to insure that as many students as possible participate in this survey, I would greatly appreciate your help. I am enclosing additional copies for distribution after students complete the CLAST. Please read the following directions to the students before they begin CLAST.

"If you have not completed and returned the CLAST survey on test preparation methods which was mailed with the CLAST instructions, please get a copy from me after you have completed the CLAST. Return the survey to the CLAST survey collector, located in front of the building, after your survey is completely filled out. Thank you."

Thank you, in advance, for your time and cooperation concerning this matter. If you are interested in the final results of this study, please contact me at 791-2608.

Sincerely,

Sharon A. Swallwood

APPENDIX E
CLAST INTERVIEW GUIDESHEET

Name _____

Placement Scores
Math _____ Reading _____ ELS _____ Essay _____

CLAST Scores
Math _____ Reading _____ ELS _____ Essay _____

1. Did you take any college preparatory courses and were they helpful?

2. What factors, such as your high school preparation, college preparation, CLAST preparation strategies, etc. contributed most to your CLAST scores?

3. In retrospect, what would you have done differently in preparation for the CLAST? What would you add? What would you omit?

4. Did other factors, such as time spent, test anxiety, test conditions, affect your CLAST performance?

5. How much time did you spend studying for CLAST? What did you do the night before the CLAST?

6. If you had to prepare for the CLAST for the first time or if you took a subtest for a second time, knowing what you know now about the CLAST, what would you do differently?

7. What advice would you give future first-time CLAST takers?

8. Additional comments.

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BIOGRAPHICAL SKETCH

Sharon A. Swallwood was encouraged to enter the field of education as her father and fraternal grandfather were teachers and her mother worked in a high school guidance department. She graduated from SUNY Stony Brook in three and one-half years with an interdisciplinary Bachelor of Arts in social science.

Her first full-time teaching position was with the New York City Board of Education in a GED program for high school dropouts, youthful offenders, and other nontraditional students. Other jobs included teaching high school, junior high school, and college. She earned a Master of Science in Reading Education at SUNY Albany in 1975.

Ms. Swallwood moved to Dover, Delaware, in 1978 to teach reading and English and serve as conference coordinator at Wesley College. Additionally, she wrote an education column for the Delaware State News (statewide paper) and served as Curriculum Design and Testing Coordinator for the Capitol School District's adult education program. She earned a Master of Arts in personnel management and supervision in 1981.

In 1983 she moved to Clearwater, Florida, for her current position, teaching reading at St. Petersburg Junior

College. She has been involved in CLASP/CLAST committee work and curriculum development. She served as a club advisor, presented motivational speeches, and mentors in Project Success.

Ms. Swallwood completed her doctorate in educational leadership at the University of Florida. While in attendance, she was inducted into three honor societies: Phi Kappa Phi, Pi Lambda Theta, and Kappa Delta Pi.

Throughout her life, Ms. Swallwood has combined a love of travel with a love of photography. She has had photographs published in magazines and newspapers and has given exhibitions. Her other interests include most cultural activities, snorkeling, reading, volunteer work, and spending time with friends and family.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.

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This dissertation was submitted to the Graduate Faculty of the College of Education and to the Graduate School and was accepted as partial fulfillment of the requirements for the degree of Doctor of Education.

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